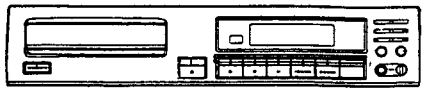
PIONEER®
*The Art of Entertainment*

# Service Manual



**ORDER NO.**
**RRV1027**

## COMPACT DISC PLAYER

# PD-203
# PD-103

### THIS MANUAL IS APPLICABLE TO THE FOLLOWING MODEL(S) AND TYPE(S).

| Type | Model | | Power Requirement | The voltage can be converted by the following method. |
|---|---|---|---|---|
| | PD-203 | PD-103 | | |
| KUXJ | ○ | ○ | AC120V | |
| KCXJ | – | ○ | AC120V | |
| RD | ○ | ○ | AC110-127V/220-240V | With the voltage selector |
| WBXK | ○ | ○ | AC220-240V | |
| WEMXK | ○ | ○ | AC220-240V | |
| WL | ○ | ○ | AC220-240V | |
| WPW | ○ | ○ | AC220-240V | |

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# CHAPTER 1

## 1.1 SAFETY INFORMATION

**This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer. Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.**
**Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty. If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.**

WARNING

**Lead in solder used in this product is listed by the California Health and Welfare agency as a known reproductive toxicant which may cause birth defects or other reproductive harm (California Health & Safety Code, Section 25249.5).**
**When servicing or handling circuit boards and other components which contain lead in solder, avoid unprotected skin contact with the solder. Also, when soldering do not inhale any smoke or fumes produced.**

NOTICE
(FOR CANADIAN MODEL ONLY)
Fuse symbols -▮▭▭- (fast operating fuse) and/or -▮▭▭- (slow operating fuse) on PCB indicate that replacement parts must be of identical designation.

REMARQUE
(POUR MODÈLE CANADIEN SEULEMENT)
Les symboles de fusible -▮▭▭- (fusible de type rapide) et/ou -▮▭▭- (fusible de type lent) sur CCI indiquent que les pièces de remplacement doivent avoir la même désignation.

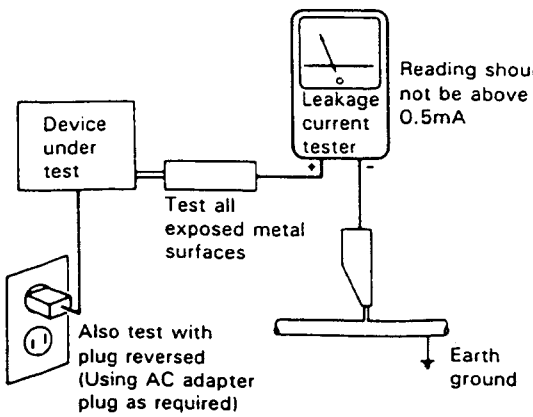
(FOR USA MODEL ONLY)

### 1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

**LEAKAGE CURRENT CHECK**

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5mA.


Leakage current tester
Reading should not be above 0.5mA
Device under test
Test all exposed metal surfaces
Also test with plug reversed (Using AC adapter plug as required)
Earth ground

AC Leakage Test

**ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.**

### 2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.
The use of a substitute replacement component which dose not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

(FOR EUROPEAN MODEL ONLY)

VARO!
AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE. ÄLÄ KATSO SÄTEESEEN.

ADVERSEL:
USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION UNDGÅ UDSAETTELSE FOR STRÅLING.

VARNING!
OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD. BETRAKTA EJ STRÅLEN.

LASER
Kuva 1
Lasersäteilyn varoitusmerkki

WARNING!
DEVICE INCLUDES LASER DIODE WHICH EMITS INVISIBLE INFRARED RADIATION WHICH IS DANGEROUS TO EYES. THERE IS A WARNING SIGN ACCORDING TO PICTURE 1 INSIDE THE DEVICE CLOSE TO THE LASER DIODE.

LASER
Picture 1
Warning sign for laser radiation

IMPORTANT
THIS PIONEER APPARATUS CONTAINS LASER OF CLASS 1.
SERVICING OPERATION OF THE APPARATUS SHOULD BE DONE BY A SPECIALLY INSTRUCTED PERSON.

LASER DIODE CHARACTERISTICS
MAXIMUM OUTPUT POWER: 5 mw
WAVELENGTH: 780-785 nm

## LABEL CHECK (SINGLE type)

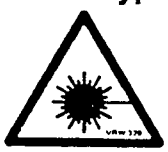
**WBXK type**

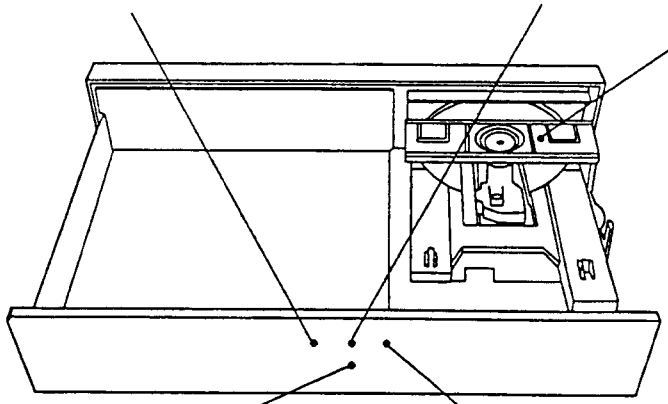
CAUTION
INVISIBLE LASER RADIATION WHEN OPEN, AVOID EXPOSURE TO BEAM
PRW1018

**WEMXK type**

ADVARSEL
USYNLIG LASERSTRÅLING VED ÅBNING NÅR SIKKERHED SAFBRYDERE ER UDE AF FUNKTION.
UNOGÅ UDSÆTTELSE FOR STRÅLING.
VORSICHT!
UNSICHTBARE LASER-STRAHLUNG TRITT AUS, WENN DECKEL (ODER KLAPPE) GEÖFFNET IST! NICHT DEM STRAHL AUSSETZEN!
VRW1094

**WEMXK and WBXK types**





VARO!
Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättömälle lasersäteilylle. Älä katso säteeseen.
VARNING!
Osynlig laserstrålning när denna del är öppnad och spärren är urkopplad. Betrakta ej strålen.
PRW1233

**WEMXK type**

CLASS 1
LASER PRODUCT
VRW-328

**WEMXK and WBXK types**

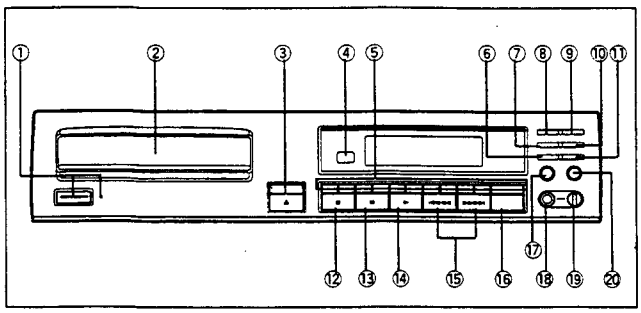
### Additional Laser Caution

1. Laser Interlock Mechanism
   The position of the switch (S601) for detecting loading completion is detected by the system microprocessor, and the design prevents laser diode oscillation when the switch (S601) is not in $\overline{\text{CLMP}}$ terminal side (when the mechanism is not clamped and $\overline{\text{CLMP}}$ signal is high level). Thus, the interlock will no longer function if the switch (S601) is deliberately set to $\overline{\text{CLMP}}$ terminal side (if $\overline{\text{CLMP}}$ signal is low level).
   In the test mode * the interlock mechanism will not function.
   Laser diode oscillation will continue, if pin 1 of M51593FP (IC101) on the preamplifier board loaded on pickup assembly are connected to GND, or pin 19 is connected to low level (ON), or else the terminals of Q101 are shorted to each other (fault condition).
2. When the cover is opened, close viewing of the objective lens with the naked eye will cause exposure to a Class 1 laser beam.

* Refer to page 1-8.

# 1.2 PANEL FACILITIES

## For KUXJ, KCXJ, WBXK, WL, WPW and WEMXK types




### FRONT PANEL

**① POWER STANDBY/ON switch and STANDBY indicator**
**② Disc tray**
**③ OPEN/CLOSE button (⏏)**
**④ Remote sensor**
Receives the signal from the remote control unit.
- The PD-103 is not equipped with the remote sensor.

**⑤ Digit buttons (1 - 10, >10)**
**⑥ COMPU/AUTO EDIT button**
**⑦ DISPLAY OFF button**
**⑧ TIME button**
**⑨ REPEAT button**
**⑩ CLEAR button**
**⑪ PEAK SEARCH button**
**⑫ Stop button (■)**
**⑬ Pause button (II)**
**⑭ Play button (►)**
**⑮ Track/Manual search buttons (|◄◄ ◄◄ /►► ►►| )**
**⑯ PROGRAM button**
**⑰ RANDOM button**
**⑱ Headphones jack (PHONES)***
**⑲ Headphones volume control (LEVEL)***
**⑳ HI-LITE scan button**

* The Australian model of the PD-103 is not equipped with the headphones jack and headphones volume control.

# 1.3 SPECIFICATIONS

### 1. General

Type ..... Compact disc digital audio system
Power requirements
U.S. and Canadian models ..... AC 120 V, 60Hz
Other models ..... AC 220 - 240 V, 50/60 Hz
Power consumption
U.S. and Canadian models ..... 11 W
Other models ..... 12 W
Operating temperature ..... +5°C - +35°C
+41°F - +95°F
Weight ..... 3.4 kg (7 lb, 11 oz)
External dimensions
U.S., Canadian, and
U.K. models ..... 420(W) X 101.5(H) X 277(D) mm
16-9/16(W) X 4(H) X 10-15/16(D) in
Other models ..... (PD-203) 420(W) X 96.5(H) X 277(D) mm
16-9/16(W) X 3-13/16(H) X 10-15/16(D) in
(PD-103) 420(W) X 96.5(H) X 271(D) mm
16-9/16(W) X 3-13/16(H) X 10-11/16(D) in

### 2. Audio section

Frequency response ..... 2 Hz - 20 kHz
S/N ratio
PD-203, European and U.K. models of PD-103 ..102 dB or more (EIAJ)
Other models ..... 98 dB or more (EIAJ)
Dynamic range ..... 96 dB or more (EIAJ)
Harmonic distortion ..... 0.003% or less (EIAJ)
Output voltage ..... 2.0 V (EIAJ)
Wow and flutter ..... Limit of measurement (±0.001% W.PEAK) or less (EIAJ)
Channels ..... 2-channel (stereo)

### 3. Output terminal

Audio line output jacks
Control input/output jacks (available with the PD-103 and U.S. and Canadian models of the PD-203 only)
CD-DECK SYNCHRO jack
Headphones jack (with volume control) (Australian model of the PD-103 is not euipped with the headphones jack and headphones volume control.)

### 4. Accessories

- Remote control unit (PD-203 only) ..... 1
- AAA/R03 dry cell batteries (PD-203 only) ..... 2
- Control cable (provided with PD-103 and U.S. and Canadian models of PD-203 only) ..... 1
- Output cable ..... 1
- Operating instructions ..... 1

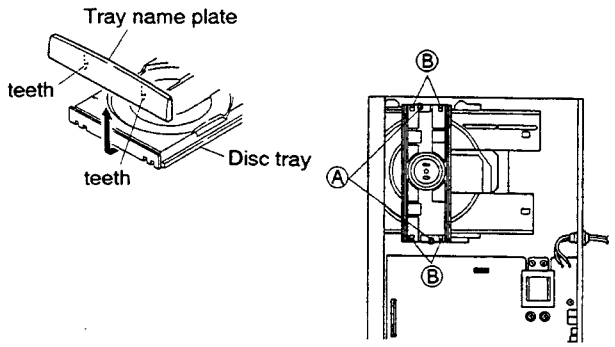
***NOTE:***
*Specifications and design subject to possible modification without notice, due to improvements.*

# 1.4 DISASSEMBLY

## 1. REMOVING THE TRAY (See Fig. 1.)

As the teeth of the tray cannot be bent, remove the tray according to the following procedures.

① Remove the bonnet.
② Press the OPEN/CLOSE ( ▲ ) button on the front panel, and move the tray to the OPEN position.
③ Remove the tray name plate.
(Release the two teeth of the tray name plate, and lift it up.)
④ Push in the tray.
⑤ Remove the clamper base.
(Remove the two screws Ⓐ and release the four teeth of clamp base.)
⑥ Remove the operation panel.
⑦ Pull out the tray.




Note: When opening with your hands, do so as follows.
1) Pull the right edge Ⓐ of the clamper cam in the direction of the operation panel. The servo mechanism descends, the clamper is released, and the tray opens about 2 cm.

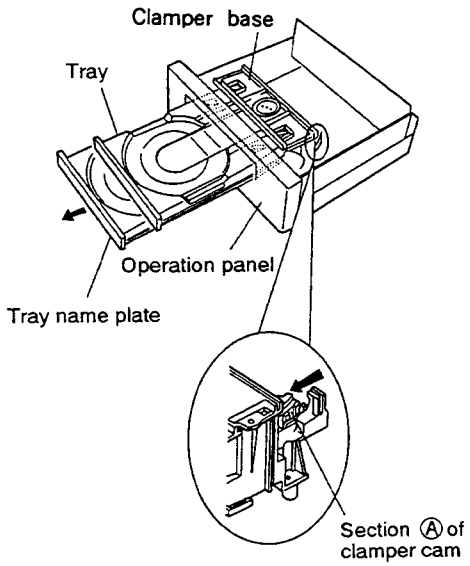



Fig. 1.

## 2. REMOVING THE SERVO MECHANISM ASSY

① Remove the tray and clamper base. (See 1.)
② With the servo mechanism assembly in the descended condition (tray open position), remove the 4 screws Ⓑ holding this assembly, and screw Ⓒ holding the ground lead. Cut the binder holding the bundle of wires onto the loading base with a pair of nippers.

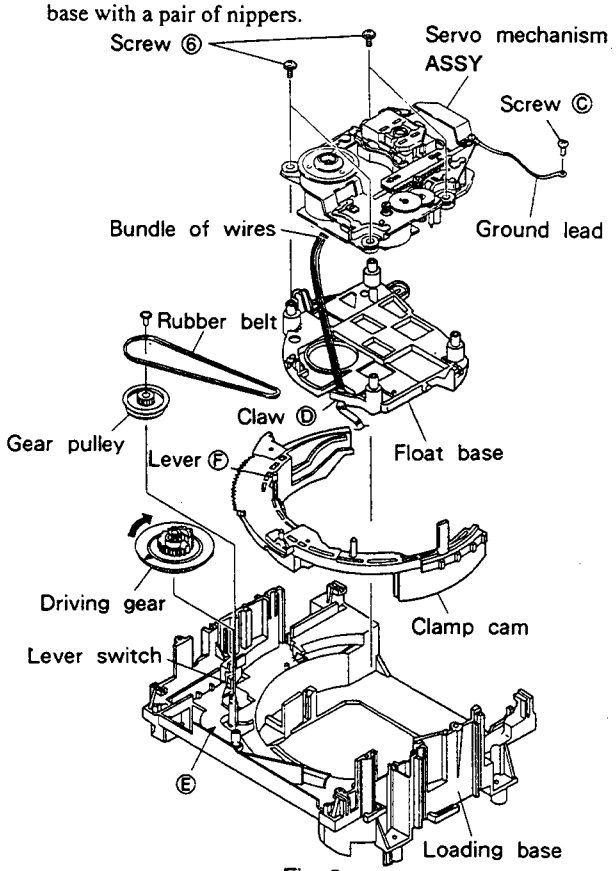



Fig. 2.

## 3. REMOVING THE FLOAT BASE (See Fig. 2.)

① Remove the servo mechanism assembly. (See 2.)
② Rotate the driving gear in the clockwise direction fully. The clamp cam will rotate in the counterclockwise direction, and the float base will rise.
③ After removing the bundle of wires from claw Ⓓ of the float base, remove the float base.

Note: If the clamp cam does not rotate even if the driving gear is rotated, it means that these gears are not engaged. In this case, engage them in the correct position according to the following procedures, and rotate the driving gear.
1) Adjust the ▼ mark of the driving gear (on the round hole) to the ▲ mark Ⓔ of the loading base.
2) Rotate lever Ⓕ on the clamp cam in the counterclockwise direction.

## 4. REMOVING THE CLAMP CAM

① Remove the float base. (See 3.)
② Remove the gear pulley and driving gear.
③ After rotating the clamp cam fully in the counter clockwise direction, pull it up.

## 5. REMOVING THE MOTHER BOARD ASSY

① Remove CN131, CN202, CN205, CN351, and CN401 (connectors).
② Remove the screw Ⓐ securing the LINE OUT terminal from the rear.
③ Remove the screw Ⓑ to remove the wrapping of the power cord.
④ Remove the four screws Ⓒ securing the board and the four screws Ⓓ securing the power transformer.
⑤ Lift the mother board assembly straight up to remove it.

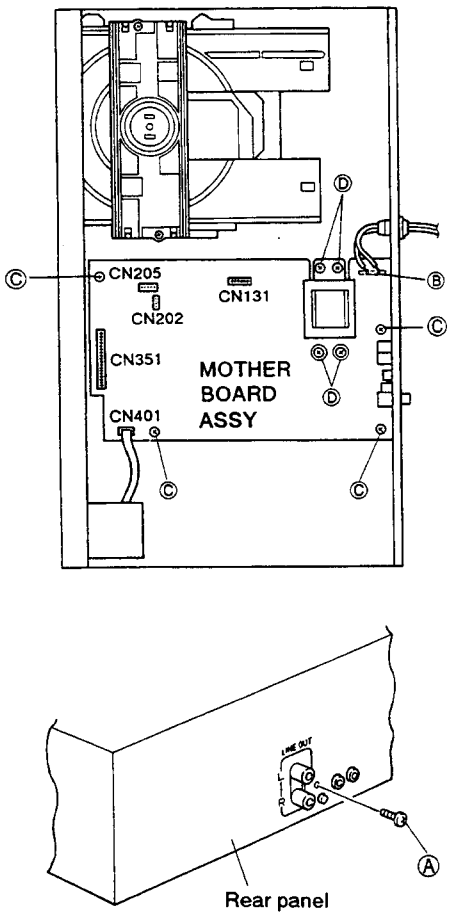






Fig. 3.

## 6. INSTALLING THE CLAMP CAM

① While pushing down the lever switch on the loading base towards the transformer board assembly, install the clamp cam.

## 7. INSTALLING THE FLOAT BASE

① Rotate the clamp cam in the counterclockwise direction fully, and install the float base.
For details on rotating the clamp cam, refer to "3. Removing the Float Base".

## 8. INSTALLING THE TRAY

① Rotate the driving gear in the counterclockwise direction, and lower the servo mechanism assembly to the maximum.
② Rotate the driving gear in the counterclockwise direction, and adjust the ▼ mark of the driving gear (on the round hole) to the ▲ mark of the loading base.
③ Insert the tray.

Note 1: If the servo mechanism assembly does not descend even if the driving gear is rotated, it means that the gears are not engaged.
In this case, perform ②, and rotate the driving gear once again.

Note 2: The servo mechanism assembly will not rise fully even if the tray is inserted completely. However, it rises to the maximum automatically when the power is supplied.

# 1.5 ADJUSTMENTS

## ● Adjustment Methods

If a disc player is adjusted incorrectly or inadequately, it may malfunction or not work at all even though there is nothing at all wrong with the pickup or the circuitry. Adjust correctly following the adjustment procedure.

## ● Adjustment Items/Verification Items and Order

If the specified values cannot be obtained or no adjustment is possible by performing the verifications or adjustments described in steps 1 − 4, the pickup block may be defective.

| Step | Item | Test Point | Adjustment Location |
|---|---|---|---|
| 1 | Focus offset verification | TP1, Pin 6 (FCS. ERR) | None |
| 2 | Tracking error balance verification | TP1, Pin 2 (TRK. ERR) | None |
| 3 | Pickup radial/tangential direction tilt adjustment | TP1, Pin 1 (RF) | Radial tilt adjustment screw, Tangential tilt adjustment screw |
| 4 | RF level verification | TP1, Pin 1 (RF) | None |
| 5 | Focus servo loop gain adjustment | TP1, Pin 5 (FCS. IN)<br>TP1, Pin 6 (FCS. ERR) | VR152 (FCS. GAN) |
| 6 | Tracking servo loop gain adjustment | TP1, Pin 3 (TRK. IN)<br>TP1, Pin 2 (TRK. ERR) | VR151 (TRK. GAN) |

● **Abbreviation table**

FCS. ERR :Focus Error
TRK. ERR :Tracking Error
FCS GAN :Focus Gain
TRK GAN :Tracking Gain
FCS. IN :Focus In
TRK. IN :Tracking In

## ● Measuring Instruments and Tools

1. Dual trace oscilloscope (10:1 probe)
2. Low-frequency oscillator
3. Test disc (YEDS-7)
4. 8cm disc (With at least about 20 minutes of recording)
5. Low-pass filter (39kΩ + 0.001 μF)
6. Resistor (100 kΩ )
7. Ball point hexagon wrench (GGK1002)
8. Standard tools

## ● Test Point and Adjustment Variable Resistor Positions

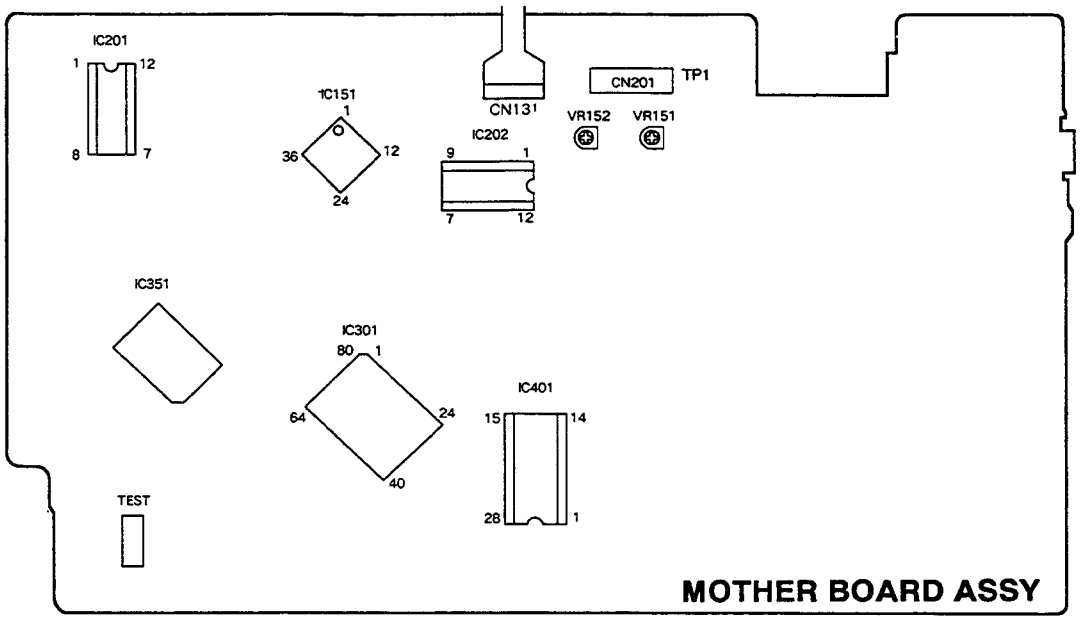



Figure 1 Adjustment Locations

## ● Notes

1. Use a 10:1 probe for the oscilloscope.
2. All the knob positions (settings) for the oscilloscope in the adjustment procedures are for when a 10:1 probe is used.

## ● Test Mode

These models have a test mode so that the adjustments and checks required for service can be carried out easily. When these models are in test mode, the keys on the front panel work differently from normal. Adjustments and checks can be carried out by operating these keys with the correct procedure. For these models, all adjustments are carried out in test mode.

**[Setting these models to test mode]**

How to set this model into test mode.

1. Unplug the power cord from the AC socket.
2. Short the test mode jumper wires. (See Figure 1.)
3. Plug the power cord back into the AC socket.

When the test mode is set correctly, the display is different from what it usually is when the power is turned on. If the display is still the same as usual, test mode has not been set correctly, so repeat Steps 1 – 3.

**[Release from test mode]**

Here is the procedure for releasing the test mode:

1. Press the STOP key and stop all operations.
2. Unplug the power cord from the AC socket.

**[Operations of the keys in test mode]**

| Code | Key Name | Function In Test Mode | Explanation |
|---|---|---|---|
| | PROGRAM | Focus servo close | The laser diode is lit up and the focus actuator is lowered, then raised slowly and the focus servo is closed at the point where the objective lens is focused on the disc.<br>With the player in this state, if you lightly rotate the stopped disc by hand, you can hear the sound the focus servo.<br>If you can hear this sound, the focus servo is operating correctly. If you press this key with no disc mounted, the laser diode lights up, the focus actuator is pulled down, then the actuator is raised and lowered three times and returned to its original position. |
| ► | PLAY | Spindle servo ON | Starts the spindle motor in the clockwise direction and when the disc rotation reaches the prescribed speed (about 500 rpm at the inner periphery), sets the spindle servo in a closed loop.<br>Be careful. Pressing this key when there is no disc mounted makes the spindle motor run at the maximum speed.<br>If the focus servo does not go correctly into a closed loop or the laser light shines on the mirror section at the outermost periphery of the disc, the same symptom is occurred. |
| ❚❚ | PAUSE | Tracking servo close/open | Pressing this key when the focus servo and spindle servo are operating correctly in closed loops puts the tracking servo into a closed loop, displays the track number being played back and the elapsed time on the front panel, and outputs the playback signal.<br>If the elapsed time is not displayed or not counted correctly or the audio is not played back correctly, it may be that the laser is shining on the section with no sound recorded at the outer edge of the disc, that something is out of adjustment, or that there is some other problem.<br>This key is a toggle key and open/close the tracking servo alternately. This key has no effect if no disc is mounted. |

| Code | Key Name | Function in Test Mode | Explanation |
|---|---|---|---|
| ⏮• ◀◀ | MANUAL TRACK SEARCH REV | Carriage reverse (inwards) | Moves the pickup position toward the inner diameter of the disc. When this key is pressed with the tracking servo in a closed loop, the tracking servo automatically goes into an open loop. Since the motor does not automatically stop at the mechanical end point in test mode, be careful with this operation. |
| ▶▶• ⏭ | MANUAL TRACK SEARCH FWD | Carriage forward (outwards) | Moves the pickup position toward the outer diameter of the disc. When this key is pressed with the tracking servo in a closed loop, the tracking servo automatically goes into an open loop. Since the motor does not automatically stop at the mechanical end point in test mode, be careful with this operation. |
| ■ | STOP | Stop | Switches off all the servos and initialized.<br>The pickup remains where it was when this key was pressed. |
| ⏏ | OPEN/CLOSE | Disc tray open/close | Open/close the disc tray. This key is a toggle key and open/close tray altenately.<br>Pressing this key when the disc is turning stops the disc, then opens the tray.<br>This key operation does not affect the position of the pickup. |

**[How to play back a disc in test mode]**

In test mode, since the servos operate independently, playing back a disc requires that you operate the keys in the correct order to close the servos.
Here is the key operation sequence for playing back a disc in test mode.

| | |
|---|---|
| PROGRAM | Lights up the laser diode and closes the focus servo. |
| ⇩ | |
| PLAY ▶ | Starts the spindle motor and closes the spindle servo. |
| ⇩ | |
| PAUSE ▮▮ | Closes the tracking servo. |

Wait at least 2–3 seconds between each of these operations.

## 1. Focus Offset Verification

| | | | |
|---|---|---|---|
| ● Objective<br>● Symptom when out of adjustment | Verify the DC offset for the focus error amp.<br>The model does not focus in and the RF signal is dirty. | | |
| ● Measurement instrument connections | Connect the oscilloscope to TP1, Pin 6 (FCS. ERR)<br>[Settings] 5 mV/division<br>10 ms/division<br>DC mode | ● Player state<br>● Adjustment location<br>● Disc | Test mode, stopped<br>(just the Power switch on)<br>None<br>None needed |

**[Procedure]**

Verify the DC voltage at TP1, Pin 6 (FCS. ERR) is 0 ± 50 mV.

Note : If the specified values cannot be obtained or no adjustment is possible by performing the verifications or adjustments described in adjustment items 1 – 4, the pickup block may be defective.

## 2. Tracking Error Balance Verification

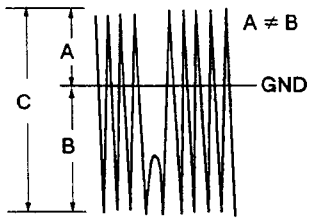
| | | | |
|---|---|---|---|
| ● Objective<br>● Symptom when out of adjustment | To verify that there is no variation in the sensitivity of the tracking photo diode.<br>Play does not start or track search is impossible. | | |
| ● Measurement instrument connections | Connect the oscilloscope to TP1, Pin 2 (TRK. ERR). This connection may be via a low pass filter.<br>[Settings] 50 mV/division<br>5 ms/division<br>DC mode | ● Player state<br>● Adjustment location<br>● Disc | Test mode, focus and spindle servos closed and tracking servo open<br>None<br>YEDS-7 |

**[Procedure]**

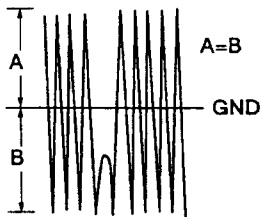
1. Move the pickup to midway across the disc (R=35 mm) with the MANUAL TRACK SEARCH FWD ▶▶ • ▶▶| or REV |◀◀ • ◀◀ key.
2. Press the PROGRAM key, then the PLAY ▶ key in that order to close the focus servo then the spindle servo.
3. Line up the bright line (ground) at the center of the oscilloscope screen and put the oscilloscope into DC mode.
4. Supposing that the positive amplitude of the tracking error signal at TP1, pin 2 (TRK ERR) is (A) and the negative amplitude is (B), the following expression is satisfied.

$$\text{When } A \geqq B,\ \frac{A-B}{C} \times \frac{1}{2} \leqq 0.1$$

$$\text{When } A < B,\ \frac{B-A}{C} \times \frac{1}{2} \leqq 0.1$$




When there is a DC component




When there is no DC component

## 3. Pickup Radial/Tangential Tilt Adjustment

| | | | |
|---|---|---|---|
| ● Objective | To adjust the angle of the pickup relative to the disc so that the laser beams are shone straight down into the disc for the best read out of the RF signals. | | |
| ● Symptom when out of adjustment | Sound broken;some discs can be played but not others. | | |
| ● Measurement instrument connections | Connect the oscilloscope to TP1, Pin 1 (RF).<br>[Settings] 20 mV/division<br>200 ns/division<br>AC mode | ● Player state<br>● Adjustment location<br>● Disc | Test mode, play<br>Pickup radial tilt adjustment screw and tangential tilt adjustment screw<br>8 cm disc<br>(However, those with approx. 20 min of audio signal (music).) |

**[Procedure]**

1. Press the MANUAL TRACK SEARCH FWD ▶▶ • ▶▶| or REV |◀◀ • ◀◀ key to move the pickup to the external circumference of the disc.
   Press the PROGRAM key, the PLAY ▶ key, then the PAUSE ▮▮ key in that order to close the respective servos and put the player into play mode.
2. First, adjust the radial tilt adjustment screw with the hexagon wrench (GGK1002) so that the eye pattern (the diamond shape at the center of the RF signal) can be seen the most clearly.
3. Next, adjust the tangential tilt adjustment screw with the hexagon wrench (GGK1002) so that the eye pattern (the diamond shape at the center of the RF signal) can be seen the most clearly (Figure 3).
   ※ The ball-point type hexagonal wrench is used because the disc will get in the way if a normal hexagonal wrench is used.
4. Adjust the radial tilt adjustment screw and the tangential tilt adjustment screw again so that the eye pattern can be seen the most clearly. As necessary, adjust the two screws alternately so that the eye pattern can be seen the most clearly.
5. When the adjustment is completed, lock the radial and tangential adjustment screw.

**Note**:Radial and tangential mean the directions relative to the disc shown in Figure 2.

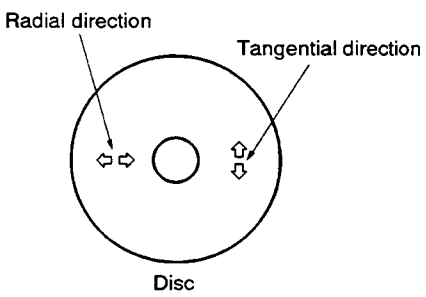
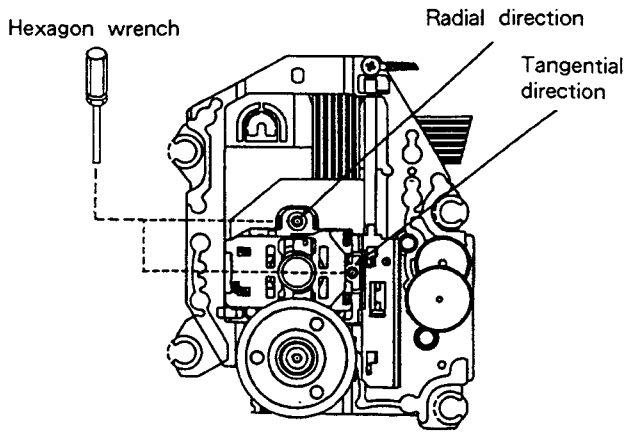



Figure 2



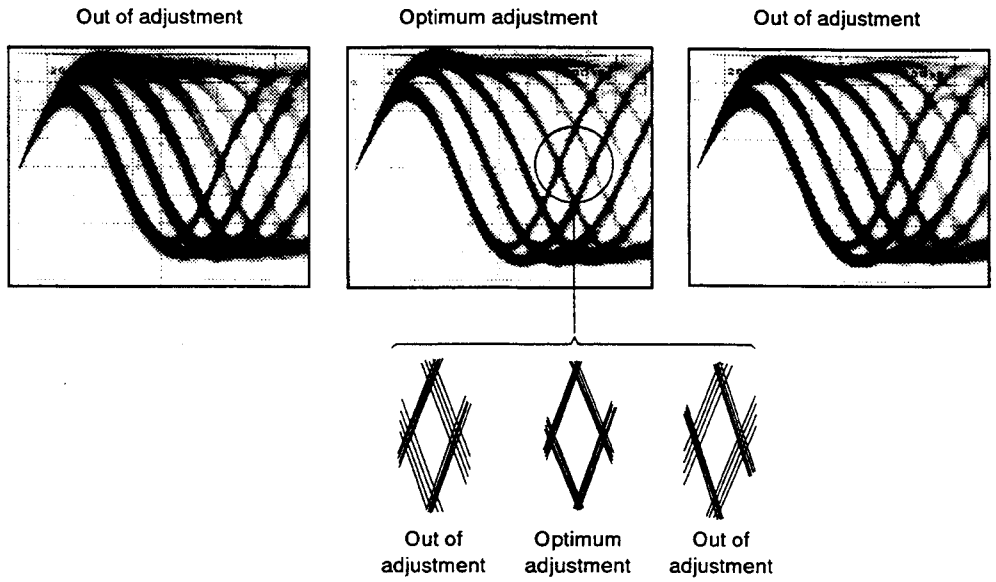



Figure 3 Eye pattern

## 4. RF Level Verification

| | | | |
|---|---|---|---|
| ● Objective | To verify the playback RF signal amplitude | | |
| ● Symptom when out of adjustment | No play or no search | | |
| ● Measurement instrument connections | Connect the oscilloscope to TP1, Pin 1 (RF).<br>[Settings] 50 mV/division<br>10 ms/division<br>AC mode | ● Player state<br>● Adjustment location<br>● Disc | Test mode, play<br>None<br>YEDS-7 |

**[Procedure]**

1. Move the pickup to midway across the disc (R=35 mm) with the MANUAL TRACK SEARCH FWD ▶▶ • ▶▶| or REV |◀◀ • ◀◀ key, then press the PROGRAM key, the PLAY ▶ key, then the PAUSE ▮▮ key in that order to close the respective servos and put the player into play mode.
2. Verify the RF signal amplitude is 1.2 Vp-p ± 0.2 V.

## 5. Focus Servo Loop Gain Adjustment

| | | | |
|---|---|---|---|
| ● Objective<br>● Symptom when out of adjustment | To optimize the focus servo loop gain.<br>Playback does not start or focus actuator noisy. | | |
| ● Measurement instrument connections | See figure 4.<br>[Settings]<br>CH1 CH2<br>20 mV/division 5 mV/division<br>X-Y mode | ● Player state<br>● Adjustment location<br>● Disc | Test mode, play<br>VR152 (FCS. GAN)<br>YEDS-7 |

**[Procedure]**

1. Set the AF generator output to 1.2 kHz and 1 Vp-p.
2. Press the MANUAL TRACK SEARCH FWD ▶▶ • ▶▶| or REV |◀◀ • ◀◀ key to move the pickup to halfway across the disc (R=35 mm), then press the PROGRAM key, the PLAY ▶ key, then the PAUSE ▮▮ key in that order to close the corresponding servos and put the player into play mode.
3. Adjust VR152 (FCS. GAN) so that the Lissajous waveform is symmetrical about the X axis and the Y axis.

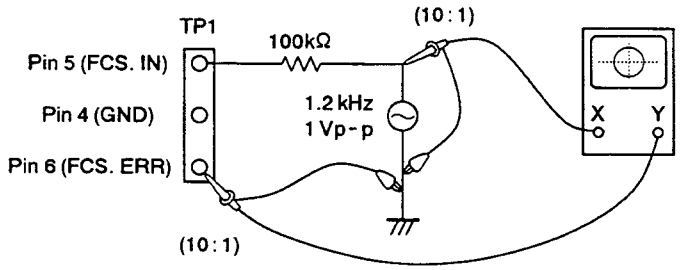
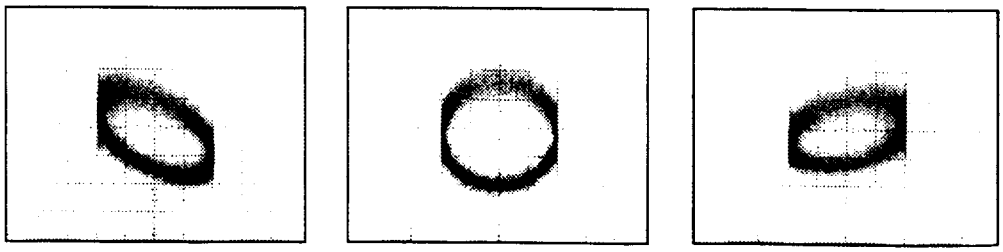



Figure 4

Focus Gain Adjustment



Higher gain | Optimum gain | Lower gain

## 6. Tracking Servo Loop Gain Adjustment

| | | | |
|---|---|---|---|
| ● Objective | To optimize the tracking servo loop gain. | | |
| ● Symptom when out of adjustment | Playback does not start, during searches the actuator is noisy, or tracks are skipped. | | |
| ● Measurement instrument connections | See Figure 5.<br><br>[Settings]<br>CH1 CH2<br>50 mV/division 20 mV/division<br>X-Y mode | ● Player state<br><br>● Adjustment location<br><br>● Disc | Test mode, play<br><br>VR151 (TRK. GAN)<br><br>YEDS-7 |

**[Procedure]**

1. Set the AF generator output to 1.2 kHz and 2 Vp-p.
2. Press the MANUAL TRACK SEARCH FWD ▶▶ • ▶▶| or REV |◀◀ • ◀◀ key to move the pickup to halfway across the disc (R=35 mm), then press the PROGRAM key, the PLAY ▶ key, then the PAUSE ▮▮ key in that order to close the corresponding servos and put the player into play mode.
3. Adjust VR151 (TRK. GAN) so that the Lissajous waveform is symmetrical about the X axis and the Y axis.

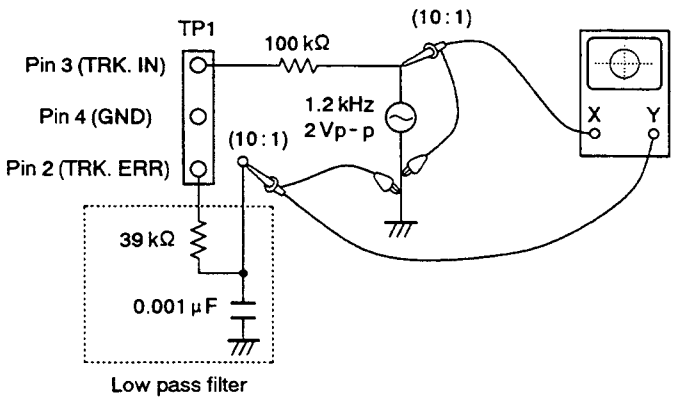
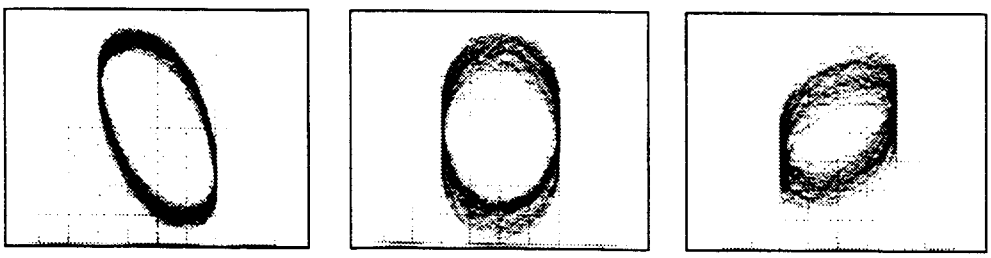



Figure 5

Tracking Gain Adjustment



Higher gain | Optimum gain | Lower gain

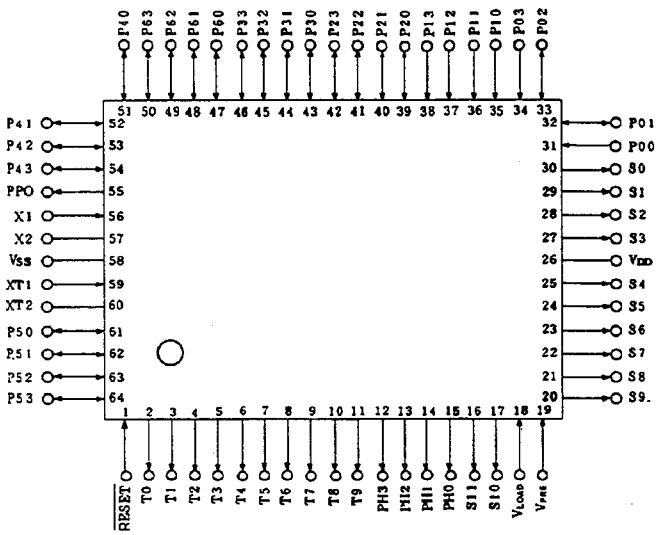
# 1.6 IC INFORMATION

- The information shown in the list is basic information and may not correspond exactly to that shown in the schematic diagrams.

## ■ PD4457A ( IC351 )

### • System Control

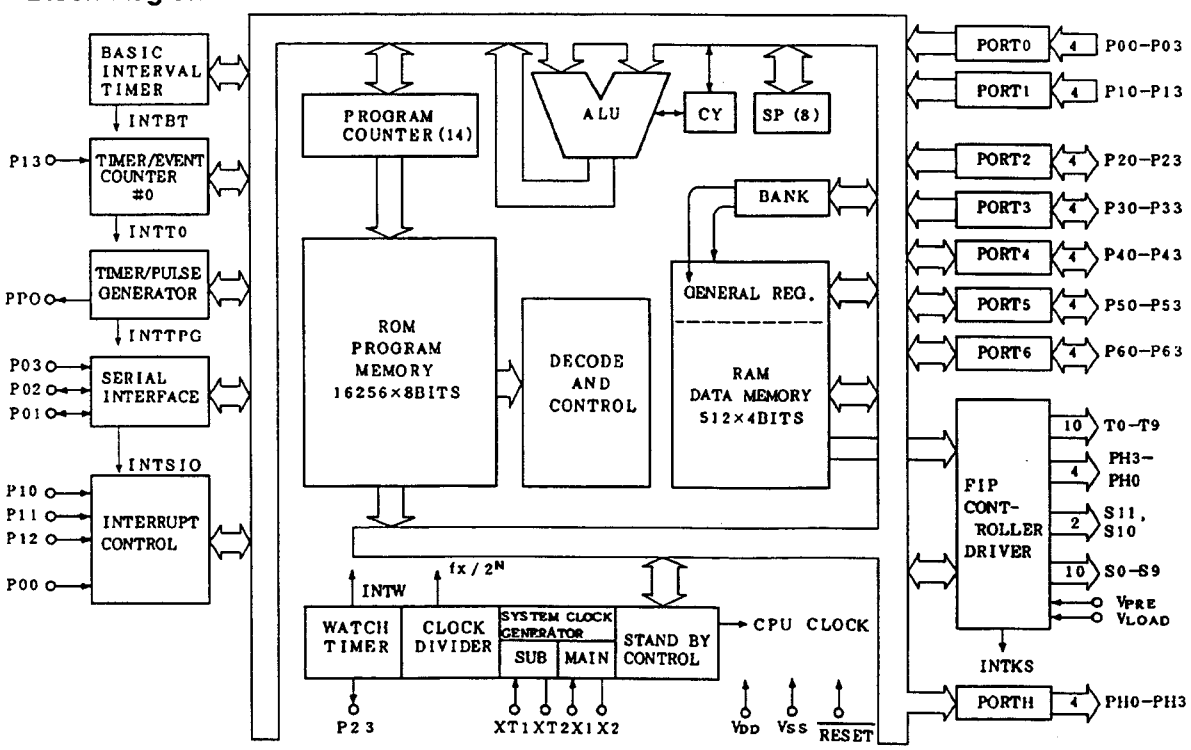
### ● Pin Arrangement (Top view)




### ● Pin Function

| No. | Pin Name | Function |
|---|---|---|
| 1 | $\overline{\text{RESET}}$ | Reset input. |
| 2-11 | T0-T9 | Digit output. |
| 12-15 | PH3-PH0 | Port H. |
| 16,17 | S11,S10 | Segment output. |
| 18 | VLOAD | Power supply terminal for FIP driver. |
| 19 | VPRE | Power supply terminal for FIP driver. |
| 20-25 | S9-S4 | Segment output. |
| 26 | VDD | + Power supply terminal. |
| 27-30 | S3-S0 | Segment output. |
| 31-34 | P00-P03 | Port 0. |
| 35-38 | P10-P13 | Port 1. |
| 39-42 | P20-P23 | Port 2. |
| 43-46 | P30-P33 | Port 3. |
| 47-50 | P60-P63 | Port 6. |
| 51-54 | P40-P43 | Port 4. |
| 55 | PPO | Pulse output. |
| 56,57 | X1,X2 | Clock oscillation terminal of Main system. |
| 58 | Vss | Ground |
| 59,60 | XT1,XT2 | Clock oscillation terminal of Sub system. |
| 61-64 | P50-P53 | Port 5. |

### ● Block Diagram



# 1.7 PARTS LIST FOR PACKING AND EXPLODED VIEWS

**NOTES:**

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

## 1.7.1 PACKING

### ■ FOR PD-203

**• PART NUMBER DIFFERENCES BETWEEN PD-203/KUXJ, RD, WBXK, WEMXK, WL AND WPW TYPES.**

Part number differs between PD-203/KUXJ, RD, WBXK, WEMXK, WL and WPW.

| Mark | No. | Description | Part No. | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | KUXJ type *1 | RD type *2 | WBXK type *3 | WEMXK type *1 | WL type *2 | WPW type *2 |
| NSP | 11 | Warranty card | ARY1044 | ..... | ARW – 088 | ARW – 088 | ..... | ARY1067 |
| | 6 | Protector R | PHA1260 | PHA1240 | PHA1254 | PHA1260 | PHA1240 | PHA1240 |
| | 7 | CD Packing case | PHG2020 | PHG2025 | PHG2023 | PHG2022 | PHG2024 | PHG2024 |
| | 1 | Connection cord with mini plug | PDE – 319 | ..... | ..... | ..... | ..... | ..... |
| | 3 | Operating instructions (English) | PRB1210 | ..... | PRB1210 | ..... | ..... | PRB1210 |
| | 3 | Operating instructions (English, Spanish, Chinese) | ..... | PRE1196 | ..... | ..... | PRE1196 | ..... |
| | 3 | Operating instructions (English, French, German, Italian, Dutch, Swedish, Spanish, Portuguese) | ..... | ..... | ..... | PRE1194 | ..... | ..... |
| | 13 | Spacer | ..... | ..... | PHC1075 | ..... | ..... | ..... |
| | 12 | Polyethylene bag (for HB plug) | ..... | ..... | Z21 – 013 | ..... | ..... | ..... |

**NOTE: *1.....PACKING A, *2.....PACKING B, *3.....PACKING C (Refer to page 2-3.)**

**• FOR PD-203/KUXJ TYPE**

**Parts List**

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | 1 | Connection cord with mini plug | PDE – 319 |
| | 2 | Connection cord with pin plug | PDE1248 |
| | 3 | Operating instructions (English) | PRB1210 |
| | 4 | Remote control unit | PWW1061 |
| | 5 | Protector F | PHA1239 |
| | 6 | Protector R | PHA1260 |
| | 7 | CD packing case | PHG2020 |
| | 8 | Sheet | Z23 – 007 |
| | 9 | Battery cover | PZN1010 |
| NSP | 10 | Dry cell battery (R03, AAA) | VEM – 022 |
| NSP | 11 | Warranty card | ARY1044 |
| | 12 | ..... | |
| | 13 | ..... | |

## ■ FOR PD-103

### • PART NUMBER DIFFERENCES BETWEEN PD-103/KUXJ, KCXJ, RD, WBXK, WEMXK, WL AND WPW TYPES.

Part number differs between PD-103/KUXJ, KCXJ, RD, WBXK, WEMXK, WL and WPW.

| Mark | No. | Description | Part No. | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | KUXJ type *1 | KCXJ type *1 | RD type *2 | WBXK type *3 | WEMXK type *1 | WL type *2 | WPW type *2 |
| NSP | 11 | Warranty card | ARY1044 | ARY1039 | ..... | ARW – 088 | ARW – 088 | ..... | ARY1067 |
| | 6 | Protector R | PHA1260 | PHA1260 | PHA1240 | PHA1254 | PHA1260 | PHA1240 | PHA1240 |
| | 7 | CD packing case | PHG2008 | PHG2009 | PHG2013 | PHG2038 | PHG2037 | PHG2012 | PHG2012 |
| | 1 | Connection cord with mini plug | PDE – 319 | PDE – 319 | ..... | PDE – 319 | PDE – 319 | ..... | PDE – 319 |
| | 3 | Operating instructions (English) | PRB1210 | ..... | ..... | PRB1210 | ..... | ..... | PRB1210 |
| | 3 | Operating instructions (English, French) | ..... | PRE1195 | ..... | ..... | ..... | ..... | ..... |
| | 3 | Operating instructions (English, Spanish, Chinese) | ..... | ..... | PRE1196 | ..... | ..... | PRE1196 | ..... |
| | 3 | Operating instructions (English, French, German, Italian, Dutch, Swedish, Spanish, Portuguese) | ..... | ..... | ..... | ..... | PRE1194 | ..... | ..... |
| | 13 | Spacer | ..... | ..... | ..... | PHC1075 | ..... | ..... | ..... |
| | 12 | Polyethylene bag (for HB plug) | ..... | ..... | ..... | Z21 – 013 | ..... | ..... | ..... |

**NOTE: *1.....PACKING A, *2.....PACKING B, *3.....PACKING C (Refer to page 2-3.)**

### • FOR PD-103/KUXJ TYPE

**Parts List**

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | 1 | Connection cord with mini plug | PDE – 319 |
| | 2 | Connection cord with pin plug | PDE1248 |
| | 3 | Operating instructions (English) | PRB1210 |
| | 4 | ..... | |
| | 5 | Protector F | PHA1239 |
| | 6 | Protector R | PHA1260 |
| | 7 | CD packing case | PHG2008 |
| | 8 | Sheet | Z23 – 007 |
| | 9 | ..... | |
| NSP | 10 | ..... | |
| NSP | 11 | Warranty card | ARY1044 |
| | 12 | ..... | |
| | 13 | ..... | |

## 1.7.2 EXTERIOR

### ■ FOR PD-203

**• PART NUMBER DIFFERENCES BETWEEN PD-203/KUXJ, RD, WBXK, WEMXK, WL AND WPW TYPES.**

Part number differs between PD-203/KUXJ, RD, WBXK, WEMXK, WL and WPW.

| Mark | No. | Description | Part No. | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | KUXJ type | RD type | WBXK type | WEMXK type | WL type | WPW type |
| ⚠ | 12 | Cord stopper | CM – 22C | CM – 22B | CM – 22B | CM – 22B | CM – 22B | CM – 22B |
| | 8 | Insulator assy | DXA1490 | ..... | ..... | ..... | ..... | ..... |
| | 8 | Insulator | ..... | ..... | PNW1912 | PNW1912 | ..... | ..... |
| | 8 | Foot assy | ..... | PXA1201 | ..... | ..... | PXA1201 | PXA1201 |
| | 33 | 65 label | ORW1069 | ..... | ..... | ..... | ..... | ..... |
| | 15 | MOTHER BOARD ASSY | PWM1877 | PWM1879 | PWM1878 | PWM1878 | PWM1878 | PWM1878 |
| NSP | 5 | Single mechanism assy | PXA1487 | PXA1545 | PXA1487 | PXA1487 | PXA1545 | PXA1545 |
| | 18 | Rear base | PNA2101 | PNA2106 | PNA2104 | PNA2103 | PNA2107 | PNA2105 |
| ⚠ | 9 | Power transformer (AC120V) | PTT1237 | ..... | ..... | ..... | ..... | ..... |
| ⚠ | 9 | Power transformer (AC110 – 127/220 – 240V) | ..... | PTT1238 | ..... | ..... | ..... | ..... |
| ⚠ | 9 | Power transformer (AC220 – 240V) | ..... | ..... | PTT1236 | PTT1236 | PTT1236 | PTT1236 |
| | 20 | Display window | PAM1599 | PAM1599 | PAM1602 | PAM1602 | PAM1599 | PAM1599 |
| ⚠ | 13 | AC power cord | PDG1002 | PDG1056 | PDG1055 | PDG1003 | PDG1003 | RDG1022 |

**• FOR PD-203/KUXJ TYPE**

**Parts List**

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | 1 | Bonnet | PYY1147 |
| | 2 | Screw | FBT40P080FZK |
| | 3 | Screw | BBZ30P080FZK |
| | 4 | Screw | BBZ30P160FMC |
| NSP | 5 | Single mechanism assy | PXA1487 |
| | 6 | Tray name plate | PNW2240 |
| NSP | 7 | PCB spacer | PNY – 404 |
| | 8 | Insulator assy | DXA1490 |
| ⚠ | 9 | Power transformer | PTT1237 |
| | 10 | Screw | IBZ30P100FCC |
| | 11 | Screw | IBZ30P150FCC |
| ⚠ | 12 | Cord stopper | CM – 22C |
| ⚠ | 13 | AC power cord | PDG1002 |
| | 14 | Screw | BBZ30P060FMC |
| ⚠ | 15 | MOTHER BOARD ASSY | PWM1877 |
| NSP | 16 | HEADPHONE BOARD ASSY | PWZ2522 |
| | 17 | Headphone knob | PAC1707 |
| | 18 | Rear base | PNA2101 |
| | 19 | ..... | |
| | 20 | Display window | PAM1599 |
| | 21 | Name plate | PAM1608 |
| | 22 | Function panel | PNW2403 |
| | 23 | Mode button | PAC1709 |
| NSP | 24 | Under base | PNA1732 |
| | 25 | 10 key – 1 | PAC1710 |
| | 26 | Function button | PAC1711 |
| | 27 | LED lens | PNW2019 |
| | 28 | Power button | PAC1708 |
| NSP | 29 | SW BOARD ASSY | PWZ2518 |
| | 30 | Screw | PPZ30P120FMC |
| | 31 | FUNCTION BOARD ASSY | PWZ2818 |
| | 32 | 32P F.F.C/30V | PDD1041 |
| | 33 | 65 label | ORW1069 |
| | 34 | Screw | PDZ30P050FMC |

## ■ FOR PD-103

### • PART NUMBER DIFFERENCES BETWEEN PD-103/KUXJ, KCXJ, RD, WBXK, WEMXK, WL AND WPW TYPES.

Part number differs between PD-103/KUXJ, KCXJ, RD, WBXK, WEMXK, WL and WPW.

| Mark | No. | Description | Part No. | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | | KUXJ type | KCXJ type | RD type | WBXK type | WEMXK type | WL type | WPW type |
| ⚠ | 12 | Cord stopper | CM – 22C | CM – 22 | CM – 22B | CM – 22B | CM – 22B | CM – 22B | CM – 22B |
| | 8 | Insulator assy | DXA1490 | DXA1490 | ..... | ..... | ..... | ..... | ..... |
| | 8 | Insulator | ..... | ..... | ..... | PNW1912 | PNW1912 | ..... | ..... |
| | 8 | Foot assy | ..... | ..... | PXA1201 | ..... | ..... | PXA1201 | PXA1201 |
| | 33 | 65 label | ORW1069 | ..... | ..... | ..... | ..... | ..... | ..... |
| | 15 | MOTHER BOARD ASSY | PWM1872 | PWM1872 | PWM1875 | PWM1873 | PWM1873 | PWM1876 | PWM1874 |
| NSP | 16 | HEADPHONE BOARD ASSY | PWZ2522 | PWZ2522 | ..... | PWZ2522 | PWZ2522 | ..... | ..... |
| NSP | 5 | Single mechanism assy | PXA1487 | PXA1487 | PXA1545 | PXA1487 | PXA1487 | PXA1545 | PXA1545 |
| | 18 | Rear base | PNA2088 | PNA2089 | PNA2090 | PNA2123 | PNA2122 | PNA2091 | PNA2092 |
| ⚠ | 9 | Power transformer (AC120V) | PTT1237 | PTT1237 | ..... | ..... | ..... | ..... | ..... |
| ⚠ | 9 | Power transformer (AC110 – 127/220 – 240V) | ..... | ..... | PTT1238 | ..... | ..... | ..... | ..... |
| ⚠ | 9 | Power transformer (AC220 – 240V) | ..... | ..... | ..... | PTT1236 | PTT1236 | PTT1236 | PTT1236 |
| | 20 | Display window | PAM1596 | PAM1596 | PAM1626 | PAM1611 | PAM1611 | PAM1626 | PAM1626 |
| ⚠ | 13 | AC power cord | PDG1002 | RDG1010 | PDG1056 | PDG1055 | PDG1003 | PDG1003 | RDG1022 |
| | 17 | Headphone knob | PAC1707 | PAC1707 | ..... | PAC1707 | PAC1707 | ..... | ..... |
| | 22 | Function panel | PNW2393 | PNW2393 | PNW2395 | PNW2393 | PNW2393 | PNW2395 | PNW2394 |

### • FOR PD-103/KUXJ TYPE

**Parts List**

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | 1 | Bonnet | PYY1147 |
| | 2 | Screw | FBT40P080FZK |
| | 3 | Screw | BBZ30P080FZK |
| | 4 | Screw | BBZ30P160FMC |
| NSP | 5 | Single mechanism assy | PXA1487 |
| | 6 | Tray name plate | PNW2240 |
| NSP | 7 | PCB spacer | PNY – 404 |
| | 8 | Insulator assy | DXA1490 |
| ⚠ | 9 | Power transformer | PTT1237 |
| | 10 | Screw | IBZ30P100FCC |
| | 11 | Screw | IBZ30P150FCC |
| ⚠ | 12 | Cord stopper | CM – 22C |
| ⚠ | 13 | AC power cord | PDG1002 |
| | 14 | Screw | BBZ30P060FMC |
| ⚠ | 15 | MOTHER BOARD ASSY | PWM1872 |
| NSP | 16 | HEADPHONE BOARD ASSY | PWZ2522 |
| | 17 | Headphone knob | PAC1707 |
| | 18 | Rear base | PNA2088 |
| | 19 | ..... | |
| | 20 | Display window | PAM1596 |
| | 21 | Name plate | PAM1608 |
| | 22 | Function panel | PNW2393 |
| | 23 | Mode button | PAC1709 |
| NSP | 24 | Under base | PNA1732 |
| | 25 | 10 key – 1 | PAC1710 |
| | 26 | Function button | PAC1711 |
| | 27 | LED lens | PNW2019 |
| | 28 | Power button | PAC1708 |
| NSP | 29 | SW BOARD ASSY | PWZ2518 |
| | 30 | Screw | PPZ30P120FMC |
| | 31 | FUNCTION BOARD ASSY | PWZ2817 |
| | 32 | 30P F.F.C/30V | PDD1049 |
| | 33 | 65 label | ORW1069 |
| | 34 | Screw | PDZ30P050FMC |

## 1.7.3 SINGLE MECHANISM ASSY

### ■ FOR PD-203 AND PD-103

- **PART NUMBER DIFFERENCES BETWEEN PXA1487 AND PXA1545.**

Part number differs between PXA1487 and PXA1545.

| Mark | No. | Description | Part No. | |
|---|---|---|---|---|
| | | | PXA1487 | PXA1545 |
| NSP | 43 | Servo mechanism assy | PXA1478 | PXA1546 |

Although servo mechanism assy PXA1478 and PXA1546 are different in part number, they consist of the same components.

- **FOR PXA1487**

**Parts List**

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | 1 | Lever switch (CLAMP) | DSK1003 |
| | 2 | Float screw | PBA1048 |
| | 3 | Rubber belt | PEB1193 |
| | 4 | Motor pulley | PNW1634 |
| | 5 | Tray | PNW2455 |
| | 6 | Float base | PNW2032 |
| | 7 | Drive gear 2 | PNW2369 |
| | 8 | Gear pulley | PNW2034 |
| | 9 | Clamper base | PNW2375 |
| | 10 | Clamp cam | PNW2364 |
| | 11 | DC motor/0.75W (LOADING) | PXM1010 |
| | 12 | Float rubber | PEB1014 |
| | 13 | Float rubber | PEB1132 |
| | 14 | Screw | BPZ26P080FMC |
| | 15 | Screw | Z39 – 019 |
| | 16 | Screw | PMZ26P040FMC |
| | 17 | Pinion gear | PNW2055 |
| | 18 | DC motor (CARRIAGE) | PXM1027 |
| NSP | 19 | DC motor assy (SPINDLE) | PEA1235 |
| | 20 | Carriage base | PNW2445 |
| | 21 | Disc table | PNW1608 |
| | 22 | Screw | JFZ20P030FNI |
| | 23 | Screw | JFZ17P025FZK |
| | 24 | Gear 3 | PNW2054 |
| | 25 | Gear 2 | PNW2053 |
| | 26 | Washer | WT12D032D025 |
| | 27 | Pickup assy | PEA1179 |
| | 28 | Guide bar | PLA1094 |
| | 29 | Gear 1 | PNW2052 |
| NSP | 30 | Gear stopper | PNB1303 |
| | 31 | Screw | BPZ20P060FMC |
| | 32 | PWB holder | PNW2057 |
| | 33 | Screw | BPZ26P100FMC |
| NSP | 34 | Earth lead unit | PDF1104 |
| | 35 | Screw | BBZ26P060FMC |
| NSP | 36 | Mechanism board assy | PWX1192 |
| NSP | 37 | Clamp magnet | PMF1014 |
| NSP | 38 | Yoke | PNB1216 |
| NSP | 39 | H spacer | PEB1249 |
| NSP | 40 | Clamper S | PNW1609 |
| | 41 | Loading base | PNW2376 |
| | 42 | DC motor assy (CARRIAGE) | PEA1246 |
| NSP | 43 | Servo mechanism assy | PXA1478 |
| | 44 | Screw | BBZ30P080FZK |
| | 45 | Connector assy (4P) | PDE1238 |
| | 46 | Connector assy (5P) | PDE1239 |

# 1.8 PCB PARTS LIST

NOTES:

- Parts marked by "NSP" are generally unavailable because they are not in our Master Spare Parts List.
- The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).

560 Ω → 56 × $10^1$ → 561 ····· RD1/8PM 5 6 1 J
47k Ω → 47 × $10^3$ → 473 ····· RD1/4PS 4 7 3 J
0.5 Ω → 0R5 ····· RN2H 0 R 5 K
1 Ω → 010 ····· RS1P 0 1 0 K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k Ω → 562 × $10^1$ → 5621 ····· RN1/4PC 5 6 2 1 F

## 1. FOR PD-203

### LIST OF WHOLE PCB ASSEMBLIES

| Mark | Symbol & Description | Part No. | | | | | |
|---|---|---|---|---|---|---|---|
| | | KUXJ type | RD type | WBXK type | WEMXK type | WL type | WPW type |
| | MOTHER BOARD ASSY | PWM1877 | PWM1879 | PWM1878 | PWM1878 | PWM1878 | PWM1878 |
| NSP | MECHANISM BOARD ASSY | PXA1192 | PXA1192 | PXA1192 | PXA1192 | PXA1192 | PXA1192 |
| NSP | SUB BOARD ASSY | PWX1365 | PWX1365 | PWX1365 | PWX1365 | PWX1365 | PWX1365 |
| NSP | ├SW BOARD ASSY | PWZ2518 | PWZ2518 | PWZ2518 | PWZ2518 | PWZ2518 | PWZ2518 |
| NSP | ├HEADPHONE BOARD ASSY | PWZ2522 | PWZ2522 | PWZ2522 | PWZ2522 | PWZ2522 | PWZ2522 |
| | └FUNCTION BOARD ASSY | PWZ2818 | PWZ2818 | PWZ2818 | PWZ2818 | PWZ2818 | PWZ2818 |

### MOTHER BOARD ASSY

**• PART NUMBER DIFFERENCES BETWEEN PWM1877, PWM1879 AND PWM1878.**

Part number differs between PWM1877, PWM1879 and PWM1878.

| Mark | Symbol & Description | Part No. | | | Remarks |
|---|---|---|---|---|---|
| | | PWM1877 | PWM1879 | PWM1878 | |
| | IC31, IC32 | ····· | ICP – N10 | ICP – N10 | |
| | D391 – D394 | 1SS254 | ····· | ····· | |
| | S5 | ····· | PSB1006 | ····· | |
| | L391 | LAU010K | ····· | ····· | |
| | C393 | CCCSL101J50 | ····· | ····· | |
| | C29 | ····· | ····· | CEAS101M35 | |
| | R391 | RD1/6PM244J | ····· | ····· | |
| | R392 | RD1/6PM102J | ····· | ····· | |
| | CN351 FFC CONNECTOR (32P) | HLEM32S | 9604S – 32C | 9604S – 32C | |
| | JA391, JA392 REMOTE CONTROL JACK | RKN1004 | ····· | ····· | |

| Mark | No. | Description | Part No. |
|---|---|---|---|
| **MOTHER BOARD ASSY (PWM1877)** | | | |
| **SEMICONDUCTORS** | | | |
| | IC406 | | BA15218 |
| | IC151 | | CXA1372Q |
| | IC301 | | CXD2500BQ |
| ⚠ | IC201, IC202 | | LA6520 |
| | IC405 | | NJM4565D-D |
| ⚠ | IC22 | | NJM79L05A |
| | IC401 | | PD2026B |
| | IC351 | | PD4457A |
| ⚠ | IC21 | | PQ05RR12 |
| | Q453, Q454 | | 2SB1296 |
| | Q391 | | 2SC1740S |
| | Q403, Q404 | | 2SD2144S |
| | Q451, Q452 | | DTA124ES |
| | Q322, Q405 | | DTC124ES |
| ⚠ | D11-D14, D52 | | 11ES2 |
| | D351, D391-D397 | | 1SS254 |
| | D54 | | MTZJ18B |
| | D218 | | MTZJ6.2B |
| **COILS AND FILTERS** | | | |
| | L391, L395, L396, L470, L471 | | LAU010K |
| | L351 | | LAU100K |
| **CAPACITORS** | | | |
| | C403 | | CCCCH120J50 |
| | C404 | | CCCCH220J50 |
| | C429, C430, C435-C438 | | CCCCH390J50 |
| | C393 | | CCCSL101J50 |
| | C52 | | CEAS101M35 |
| | C27, C28 | | CEAS330M16 |
| | C26 | | CEAS331M16 |
| | C25 | | CEAS332M16 |
| | C351 | | CEAS471M6R3 |
| | C160, C162, C451, C452 | | CEAS4R7M50 |
| | C309 | | CEASR47M50 |
| | C413-C416 | | CFTYA104J50 |
| | C157, C164, C169, C218, C308 | | CGCYX103K25 |
| | C158, C159, C161, C163, C301 | | CGCYX104K25 |
| | C156, C168 | | CGCYX333K25 |
| | C307 | | CGCYX473K25 |
| | C306 | | CKCYB152K50 |
| | C155 | | CKCYB182K50 |
| | C170 | | CKCYB332K50 |
| | C171, C172 | | CKCYB472K50 |
| | C11, C13, C15, C16, C167 | | CKCYF103Z50 |
| | C17, C205, C210, C215, C219 | | CKCYF103Z50 |
| | C322, C353, C361, C461 | | CKCYF103Z50 |
| | C433, C434 (220/25) | | PCH1107 |
| | C441, C442 (0.0015/50) | | PCL1030 |
| **RESISTORS** | | | |
| | VR151, VR152 (22K) | | PCP1030 |
| | Other Resistors | | RD1/6PM□□□J |
| **OTHERS** | | | |
| | CN131 FPC CONNECTOR(12P) | | 12FMZ-ABT |
| | CN401 JUMPER CONNECTOR(3P) | | 52147-0310 |
| | CN351 FFC CONNECTOR(32P) | | 9604S-32C |
| | JA401 PIN JACK(2P) | | PKB1009 |
| | JA391, JA392 REMOTE CONTROL JACK | | RKN1004 |
| | JA393 MINI JACK | | PKN1005 |
| | X401 CRYSTAL RESONATOR(16.9344MHz) | | PSS1008 |
| ⚠ | RAPPING TAMINAL | | RKC-061 |
| | CN202 AMP CONNECTOR(4P) | | VKN1051 |
| | CN205 AMP CONNECTOR(5P) | | VKN1052 |
| | CN201 CONNECTOR(6P) | | RKP-533 |
| | X351 CERAMIC RESONATOR(4.19MHz) | | VSS1028 |
| **SW BOARD ASSY** | | | |
| **SEMICONDUCTORS** | | | |
| | D801 | | PCX1019 |
| **SWITCHES AND RELAYS** | | | |
| | S801 | | PSG1006 |
| **HEADPHONE BOARD ASSY** | | | |
| **COILS AND FILTERS** | | | |
| | L501, L504, L505 | | LAU010K |
| **CAPACITORS** | | | |
| | C501, C502 | | CKCYF103Z50 |
| | C503 | | CKCYF473Z50 |
| **RESISTORS** | | | |
| | VR501 (5K) | | PCS1003 |
| | Other Resistors | | RD1/6PM□□□J |
| **OTHERS** | | | |
| | JA501 HEADPHONE JACK | | RKN1002 |
| **FUNCTION BOARD ASSY** | | | |
| **SEMICONDUCTORS** | | | |
| | D701-D707 | | 1SS254 |
| **SWITCHES AND RELAYS** | | | |
| | S701-S708, S710-S724 | | PSG1006 |
| | S726-S728 | | PSG1006 |
| **RESISTORS** | | | |
| | All Resistors | | RD1/6PM□□□J |
| **OTHERS** | | | |
| | CN701 CONNECTOR | | 9604S-32F |
| | V701 FL INDICATOR TUBE | | PEL1085 |
| **MECHANISM BOARD ASSY** | | | |
| **SWITCHES AND RELAYS** | | | |
| | S610 | | DSG1016 |

## 2. FOR PD-103

### LIST OF WHOLE PCB ASSEMBLIES

| Mark | Symbol & Description | Part No. | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | KUXJ type | KCXJ type | RDtype | WBXK type | WEMXK type | WL type | WPW type |
| | MOTHER BOARD ASSY | PWM1872 | PWM1872 | PWM1875 | PWM1873 | PWM1873 | PWM1876 | PWM1874 |
| NSP | MECHANISM BOARD ASSY | PXA1192 | PXA1192 | PXA1192 | PXA1192 | PXA1192 | PXA1192 | PXA1192 |
| NSP | SUB BOARD ASSY | PWX1363 | PWX1363 | PWX1364 | PWX1363 | PWX1363 | PWX1364 | PWX1364 |
| NSP | ├─SW BOARD ASSY | PWZ2518 | PWZ2518 | PWZ2518 | PWZ2518 | PWZ2518 | PWZ2518 | PWZ2518 |
| NSP | ├─HEADPHONE BOARD ASSY | PWZ2522 | PWZ2522 | ..... | PWZ2522 | PWZ2522 | ..... | ..... |
| | └─FUNCTION BOARD ASSY | PWZ2817 | PWZ2817 | PWZ2817 | PWZ2817 | PWZ2817 | PWZ2817 | PWZ2817 |

### MOTHER BOARD ASSY

**• PART NUMBER DIFFERENCES BETWEEN PWM1872, PWM1875, PWM1873, PWM1876 AND PWM1874.**

Part number differs between PWM1872, PWM1875, PWM1873, PWM1876 and PWM1874.

| Mark | Symbol & Description | Part No. | | | | | Remarks |
|---|---|---|---|---|---|---|---|
| | | PWM1872 | PWM1875 | PWM1873 | PWM1876 | PWM1874 | |
| | IC31, IC32 | ..... | ICP – N10 | ICP – N10 | ICP – N10 | ICP – N10 | |
| | IC406 | BA15218 | ..... | BA15218 | BA15218 | ..... | |
| | Q451, Q452 | ..... | ..... | DTA124ES | ..... | ..... | |
| | Q453, Q454 | ..... | ..... | 2SB1296 | ..... | ..... | |
| | D392 – D394 | 1SS254 | ..... | 1SS254 | ..... | 1SS254 | |
| | S5 | ..... | PSB1006 | ..... | ..... | ..... | |
| | L391 | LAU010K | ..... | LAU010K | ..... | LAU010K | |
| | L470, L471 | LAU010K | ..... | LAU010K | ..... | ..... | |
| | C393 | CCCSL101J50 | ..... | CCCSL101J50 | ..... | CCCSL101J50 | |
| | C451, C452 | ..... | ..... | CEAS4R7M50 | ..... | ..... | |
| | R392 | RD1/6PM102J | ..... | RD1/6PM102J | ..... | RD1/6PM102J | |
| | R445, R446 | RD1/6PM471J | RD1/6PM102J | RD1/6PM271J | RD1/6PM102J | RD1/6PM102J | |
| | R447, R448 | RD1/6PM471J | ..... | RD1/6PM471J | ..... | ..... | |
| | R451, R452 | ..... | ..... | RD1/6PM473J | ..... | ..... | |
| | R453, R454 | ..... | ..... | RD1/6PM470J | ..... | ..... | |
| | R455 – R458 | ..... | ..... | RD1/6PM102J | ..... | ..... | |
| | R459 – R462 | ..... | ..... | RD1/6PM271J | ..... | ..... | |
| | CN401 JUMPER CONNECTOR (3P) | 52147 – 0310 | ..... | 52147 – 0310 | ..... | ..... | |
| | JA391, JA392 REMOTE CONTROL JACK | RKN1004 | ..... | RKN1004 | ..... | RKN1004 | |

| Mark | No. | Description | Part No. |
|---|---|---|---|

## MOTHER BOARD ASSY (PWM1872)

### SEMICONDUCTORS

| | | | |
|---|---|---|---|
| | IC406 | | BA15218 |
| | IC151 | | CXA1372Q |
| | IC301 | | CXD2500BQ |
| ⚠ | IC201 , IC202 | | LA6520 |
| | IC405 | | NJM4558D-D |
| ⚠ | IC22 | | NJM79L05A |
| | IC401 | | PD2026B(L) |
| | IC351 | | PD4457A |
| ⚠ | IC21 | | PQ05RR12 |
| | Q391 | | 2SC1740S |
| | Q403, Q404 | | 2SD2144S |
| | Q322, Q405 | | DTC124ES |
| ⚠ | D11-D14, D52 | | 11ES2 |
| | D351, D392-D397 | | 1SS254 |
| | D54 | | MTZJ18B |
| | D218 | | MTZJ6. 2B |

### COILS AND FILTERS

| | | | |
|---|---|---|---|
| | L391, L395, L396, L470, L471 | | LAU010K |
| | L351 | | LAU100K |

### CAPACITORS

| | | | |
|---|---|---|---|
| | C403 | | CCCCH120J50 |
| | C404 | | CCCCH220J50 |
| | C429, C430, C435-C438 | | CCCCH390J50 |
| | C393 | | CCCSL101J50 |
| | C52 | | CEAS101M35 |
| | C26 | | CEAS102M16 |
| | C433, C434 | | CEAS220M25 |
| | C27, C28 | | CEAS330M16 |
| | C25 | | CEAS332M16 |
| | C351 | | CEAS471M6R3 |
| | C160, C162 | | CEAS4R7M50 |
| | C309 | | CEASR47M50 |
| | C413-C416 | | CFTYA104J50 |
| | C157, C164, C169, C218, C308 | | CGCYX103K25 |
| | C158, C159, C161, C163, C301 | | CGCYX104K25 |
| | C156, C168 | | CGCYX333K25 |
| | C307 | | CGCYX473K25 |
| | C306 | | CKCYB152K50 |
| | C155 | | CKCYB182K50 |
| | C170 | | CKCYB332K50 |
| | C171, C172 | | CKCYB472K50 |
| | C11, C13, C15, C16, C167 | | CKCYF103Z50 |
| | C17, C205, C210, C215, C219 | | CKCYF103Z50 |
| | C322, C353, C361, C461 | | CKCYF103Z50 |
| | C441, C442 (0.0015/50) | | PCL1030 |

### RESISTORS

| | | | |
|---|---|---|---|
| | VR151, VR152 (22K) | | PCP1030 |
| | Other Resistors | | RD1/6PM□□□J |

### OTHERS

| | | | |
|---|---|---|---|
| | CN131 FPC CONNECTOR(12P) | | 12FMZ-ABT |
| | CN401 JUMPER CONNECTOR(3P) | | 52147-0310 |
| | CN351 FFC CONNECTOR(30P) | | 9604S-30C |
| | JA401 PIN JACK(2P) | | PKB1009 |
| | JA393 MINI JACK | | PKN1005 |
| | X401 CRYSTAL RESONATOR | | PSS1008 |
| ⚠ | RAPPING TERMINAL | | RKC-061 |
| | JA391, JA392 REMOTE CONTROL JACK | | RKN1004 |
| | CN201 CONNECTOR(6P) | | RKP-533 |
| | CN202 AMP CONNECTOR(4P) | | VKN1051 |
| | CN205 AMP CONNECTOR(5P) | | VKN1052 |
| | X351 CERAMIC RESONATOR(4. 19MHz) | | VSS1028 |

## SW BOARD ASSY

### SEMICONDUCTORS

| | | | |
|---|---|---|---|
| | D801 | | PCX1019 |

### SWITCHES AND RELAYS

| | | | |
|---|---|---|---|
| | S801 | | PSG1006 |

## HEADPHONE BOARD ASSY

### COILS AND FILTERS

| | | | |
|---|---|---|---|
| | L501, L504, L505 | | LAU010K |

### CAPACITORS

| | | | |
|---|---|---|---|
| | C501, C502 | | CKCYF103Z50 |
| | C503 | | CKCYF473Z50 |

### RESISTORS

| | | | |
|---|---|---|---|
| | VR501 (5K) | | PCS1003 |
| | Other Resistors | | RD1/6PM□□□J |

### OTHERS

| | | | |
|---|---|---|---|
| | JA501 HEADPHONE JACK | | RKN1002 |

## FUNCTION BOARD ASSY

### SEMICONDUCTORS

| | | | |
|---|---|---|---|
| | D701-D707 | | 1SS254 |

### SWITCHES AND RELAYS

| | | | |
|---|---|---|---|
| | S701-S708, S710-S724 | | PSG1006 |
| | S726-S728 | | PSG1006 |

### RESISTORS

| | | | |
|---|---|---|---|
| | All Resistors | | RD1/6PM□□□J |

### OTHERS

| | | | |
|---|---|---|---|
| | CN701 CONNECTOR | | 9604S-30F |
| | V701FL INDICATOR TUBE | | PEL1085 |

## MECHANISM BOARD ASSY

### SWITCHES AND RELAYS

| | | | |
|---|---|---|---|
| | S610 | | DSG1016 |

## 2. FOR PD-103

### LIST OF WHOLE PCB ASSEMBLIES

| Mark | Symbol & Description | Part No. | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | KUXJ type | KCXJ type | RDtype | WBXK type | WEMXK type | WL type | WPW type |
| | MOTHER BOARD ASSY | PWM1872 | PWM1872 | PWM1875 | PWM1873 | PWM1873 | PWM1876 | PWM1874 |
| NSP | MECHANISM BOARD ASSY | PXA1192 | PXA1192 | PXA1192 | PXA1192 | PXA1192 | PXA1192 | PXA1192 |
| NSP | SUB BOARD ASSY | PWX1363 | PWX1363 | PWX1364 | PWX1363 | PWX1363 | PWX1364 | PWX1364 |
| NSP | ├─SW BOARD ASSY | PWZ2518 | PWZ2518 | PWZ2518 | PWZ2518 | PWZ2518 | PWZ2518 | PWZ2518 |
| NSP | ├─HEADPHONE BOARD ASSY | PWZ2522 | PWZ2522 | ..... | PWZ2522 | PWZ2522 | ..... | ..... |
| | └─FUNCTION BOARD ASSY | PWZ2817 | PWZ2817 | PWZ2817 | PWZ2817 | PWZ2817 | PWZ2817 | PWZ2817 |

### MOTHER BOARD ASSY

**• PART NUMBER DIFFERENCES BETWEEN PWM1872, PWM1875, PWM1873, PWM1876 AND PWM1874.**

Part number differs between PWM1872, PWM1875, PWM1873, PWM1876 and PWM1874.

| Mark | Symbol & Description | Part No. | | | | | Remarks |
|---|---|---|---|---|---|---|---|
| | | PWM1872 | PWM1875 | PWM1873 | PWM1876 | PWM1874 | |
| | IC31, IC32 | ..... | ICP – N10 | ICP – N10 | ICP – N10 | ICP – N10 | |
| | IC406 | BA15218 | ..... | BA15218 | BA15218 | ..... | |
| | Q451, Q452 | ..... | ..... | DTA124ES | ..... | ..... | |
| | Q453, Q454 | ..... | ..... | 2SB1296 | ..... | ..... | |
| | D392 – D394 | 1SS254 | ..... | 1SS254 | ..... | 1SS254 | |
| | S5 | ..... | PSB1006 | ..... | ..... | ..... | |
| | L391 | LAU010K | ..... | LAU010K | ..... | LAU010K | |
| | L470, L471 | LAU010K | ..... | LAU010K | ..... | ..... | |
| | C393 | CCCSL101J50 | ..... | CCCSL101J50 | ..... | CCCSL101J50 | |
| | C451, C452 | ..... | ..... | CEAS4R7M50 | ..... | ..... | |
| | R392 | RD1/6PM102J | ..... | RD1/6PM102J | ..... | RD1/6PM102J | |
| | R445, R446 | RD1/6PM471J | RD1/6PM102J | RD1/6PM271J | RD1/6PM102J | RD1/6PM102J | |
| | R447, R448 | RD1/6PM471J | ..... | RD1/6PM471J | ..... | ..... | |
| | R451, R452 | ..... | ..... | RD1/6PM473J | ..... | ..... | |
| | R453, R454 | ..... | ..... | RD1/6PM470J | ..... | ..... | |
| | R455 – R458 | ..... | ..... | RD1/6PM102J | ..... | ..... | |
| | R459 – R462 | ..... | ..... | RD1/6PM271J | ..... | ..... | |
| | CN401 JUMPER CONNECTOR (3P) | 52147 – 0310 | ..... | 52147 – 0310 | ..... | ..... | |
| | JA391, JA392 REMOTE CONTROL JACK | RKN1004 | ..... | RKN1004 | ..... | RKN1004 | |

| Mark | No. | Description | Part No. |
|---|---|---|---|
| | | **MOTHER BOARD ASSY (PWM1872)** | |
| | | **SEMICONDUCTORS** | |
| | IC406 | | BA15218 |
| | IC151 | | CXA1372Q |
| | IC301 | | CXD2500BQ |
| ⚠ | IC201 , IC202 | | LA6520 |
| | IC405 | | NJM4558D-D |
| ⚠ | IC22 | | NJM79L05A |
| | IC401 | | PD2026B(L) |
| | IC351 | | PD4457A |
| ⚠ | IC21 | | PQ05RR12 |
| | Q391 | | 2SC1740S |
| | Q403, Q404 | | 2SD2144S |
| | Q322, Q405 | | DTC124ES |
| ⚠ | D11-D14, D52 | | 11ES2 |
| | D351, D392-D397 | | 1SS254 |
| | D54 | | MTZJ18B |
| | D218 | | MTZJ6. 2B |
| | | **COILS AND FILTERS** | |
| | L391, L395, L396, L470, L471 | | LAU010K |
| | L351 | | LAU100K |
| | | **CAPACITORS** | |
| | C403 | | CCCCH120J50 |
| | C404 | | CCCCH220J50 |
| | C429, C430, C435-C438 | | CCCCH390J50 |
| | C393 | | CCCSL101J50 |
| | C52 | | CEAS101M35 |
| | C26 | | CEAS102M16 |
| | C433, C434 | | CEAS220M25 |
| | C27, C28 | | CEAS330M16 |
| | C25 | | CEAS332M16 |
| | C351 | | CEAS471M6R3 |
| | C160, C162 | | CEAS4R7M50 |
| | C309 | | CEASR47M50 |
| | C413-C416 | | CFTYA104J50 |
| | C157, C164, C169, C218, C308 | | CGCYX103K25 |
| | C158, C159, C161, C163, C301 | | CGCYX104K25 |
| | C156, C168 | | CGCYX333K25 |
| | C307 | | CGCYX473K25 |
| | C306 | | CKCYB152K50 |
| | C155 | | CKCYB182K50 |
| | C170 | | CKCYB332K50 |
| | C171, C172 | | CKCYB472K50 |
| | C11, C13, C15, C16, C167 | | CKCYF103Z50 |
| | C17, C205, C210, C215, C219 | | CKCYF103Z50 |
| | C322, C353, C361, C461 | | CKCYF103Z50 |
| | C441, C442 (0. 0015/50) | | PCL1030 |
| | | **RESISTORS** | |
| | VR151, VR152 (22K) | | PCP1030 |
| | Other Resistors | | RD1/6PM□□□J |
| | | **OTHERS** | |
| | CN131 FPC CONNECTOR(12P) | | 12FMZ-ABT |
| | CN401 JUMPER CONNECTOR(3P) | | 52147-0310 |
| | CN351 FFC CONNECTOR(30P) | | 9604S-30C |
| | JA401 PIN JACK(2P) | | PKB1009 |
| | JA393 MINI JACK | | PKN1005 |
| | X401 CRYSTAL RESONATOR | | PSS1008 |
| ⚠ | RAPPING TERMINAL | | RKC-061 |
| | JA391, JA392 REMOTE CONTROL JACK | | RKN1004 |
| | CN201 CONNECTOR(6P) | | RKP-533 |
| | CN202 AMP CONNECTOR(4P) | | VKN1051 |
| | CN205 AMP CONNECTOR(5P) | | VKN1052 |
| | X351 CERAMIC RESONATOR(4. 19MHz) | | VSS1028 |
| | | **SW BOARD ASSY** | |
| | | **SEMICONDUCTORS** | |
| | D801 | | PCX1019 |
| | | **SWITCHES AND RELAYS** | |
| | S801 | | PSG1006 |
| | | **HEADPHONE BOARD ASSY** | |
| | | **COILS AND FILTERS** | |
| | L501, L504, L505 | | LAU010K |
| | | **CAPACITORS** | |
| | C501, C502 | | CKCYF103Z50 |
| | C503 | | CKCYF473Z50 |
| | | **RESISTORS** | |
| | VR501 (5K) | | PCS1003 |
| | Other Resistors | | RD1/6PM□□□J |
| | | **OTHERS** | |
| | JA501 HEADPHONE JACK | | RKN1002 |
| | | **FUNCTION BOARD ASSY** | |
| | | **SEMICONDUCTORS** | |
| | D701-D707 | | 1SS254 |
| | | **SWITCHES AND RELAYS** | |
| | S701-S708, S710-S724 | | PSG1006 |
| | S726-S728 | | PSG1006 |
| | | **RESISTORS** | |
| | All Resistors | | RD1/6PM□□□J |
| | | **OTHERS** | |
| | CN701 CONNECTOR | | 9604S-30F |
| | V701FL INDICATOR TUBE | | PEL1085 |
| | | **MECHANISM BOARD ASSY** | |
| | | **SWITCHES AND RELAYS** | |
| | S610 | | DSG1016 |

PIONEER®
*The Art of Entertainment*

# Service Manual

COMPACT DISC PLAYER

# PD-203
# PD-103

## CONTENTS

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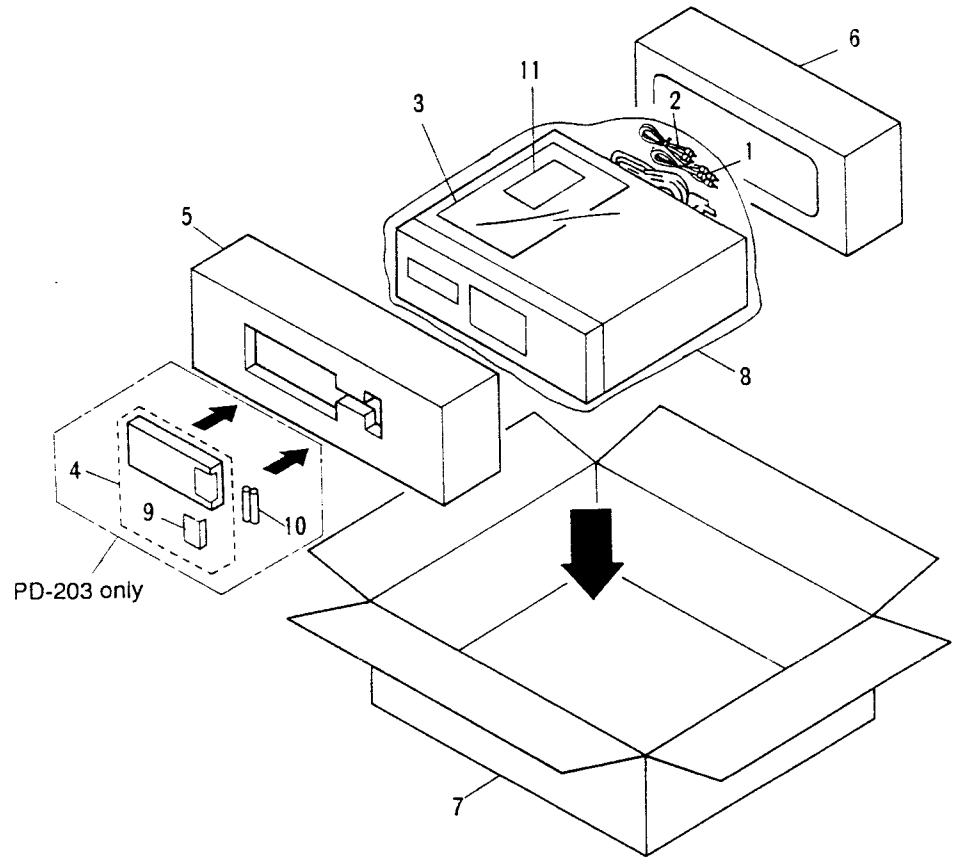
# CHAPTER 2

## 2.1 PACKING AND EXPLODED VIEWS

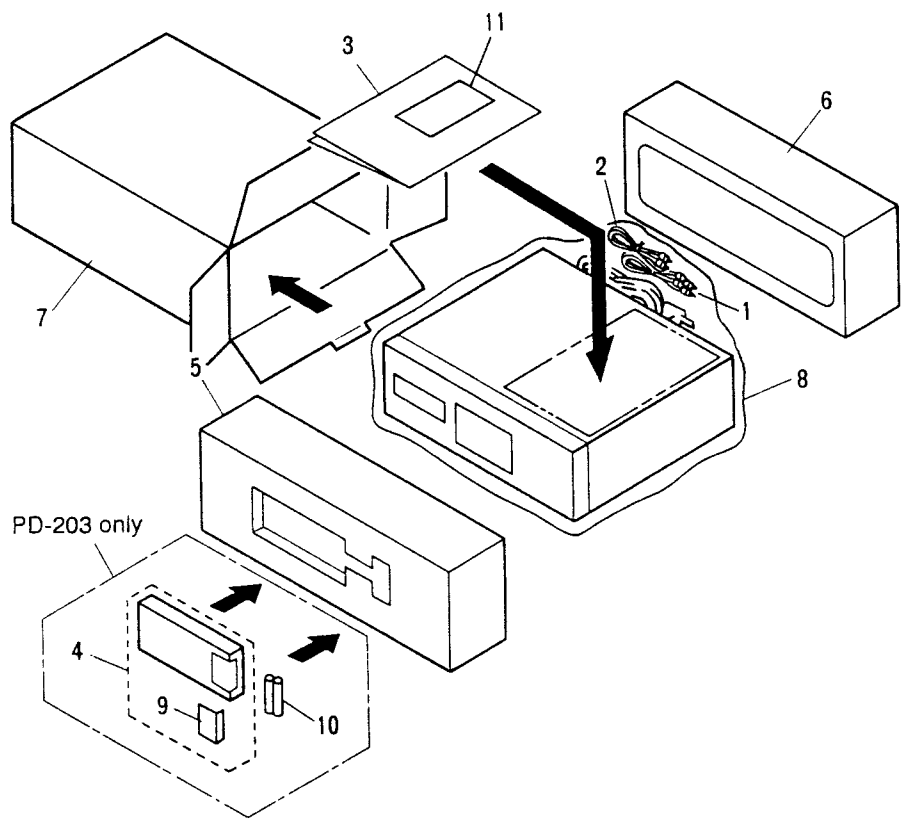
### ● PACKING A

**(FOR PD-203/KUXJ, WEMXK AND PD-103/KUXJ, KCXJ, WEMXK types)**



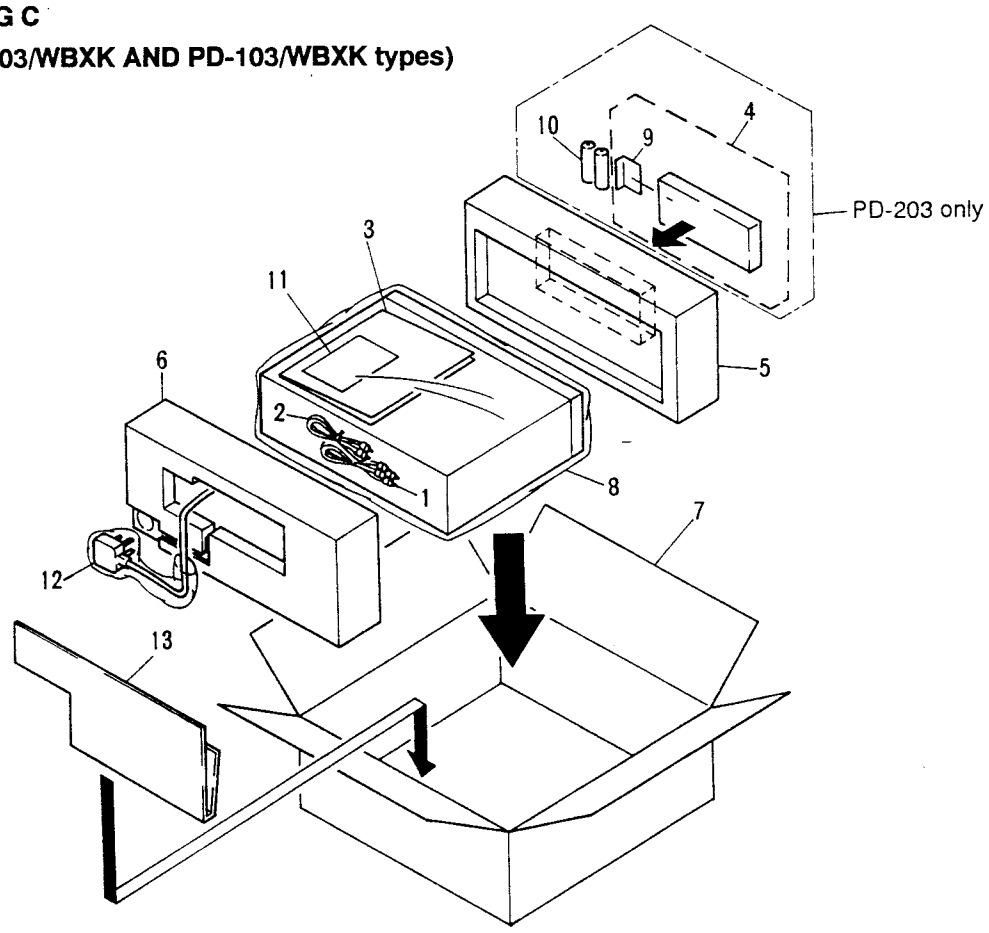

### ● PACKING B

**(FOR PD-203/WPW, RD, WL AND PD-103/WPW, RD, WL types)**

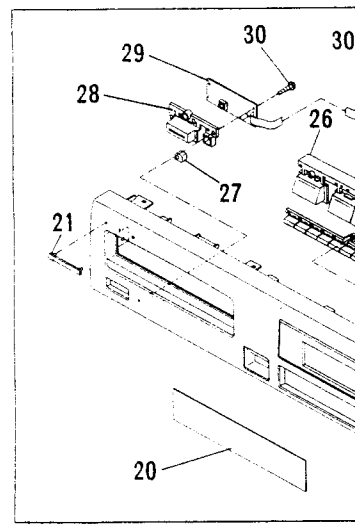



### ● PACKING C

**(FOR PD-203/WBXK AND PD-103/WBXK types)**



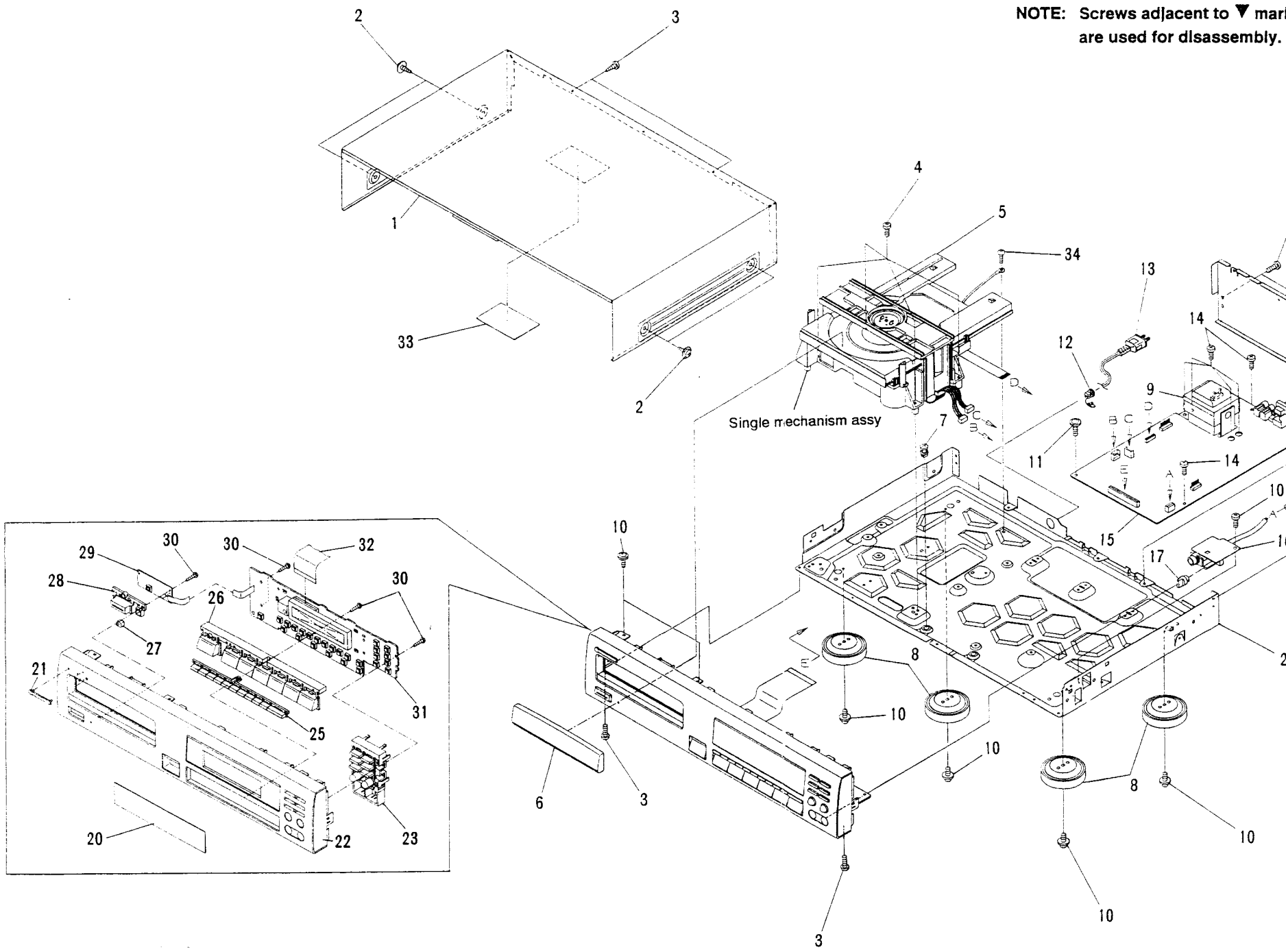

### ● EXTERIOR



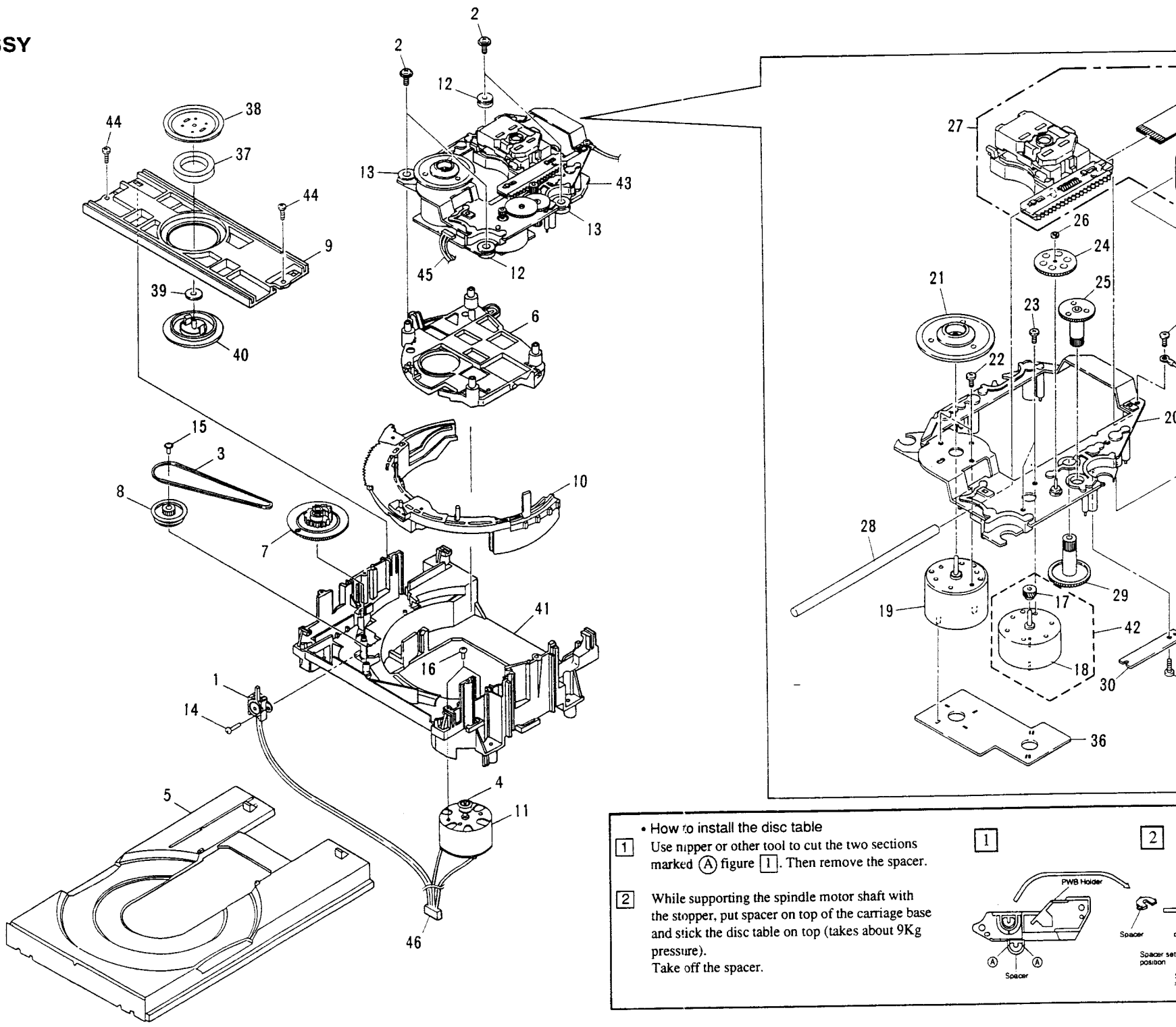

### ● SINGLE MECHANISM ASSY

## ● EXTERIOR

NOTE: Screws adjacent to ▼ mark are used for disassembly.




## ● SINGLE MECHANISM ASSY

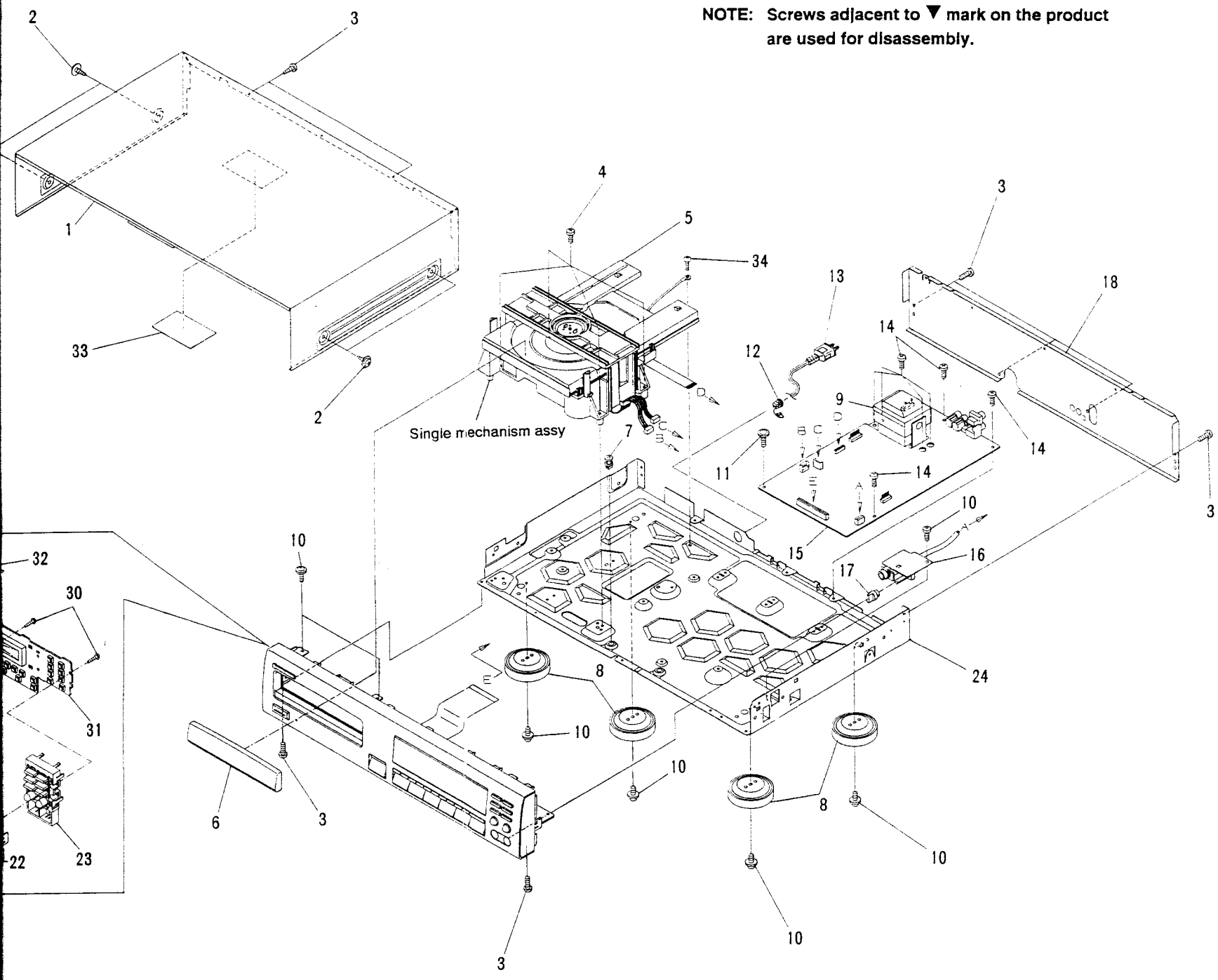


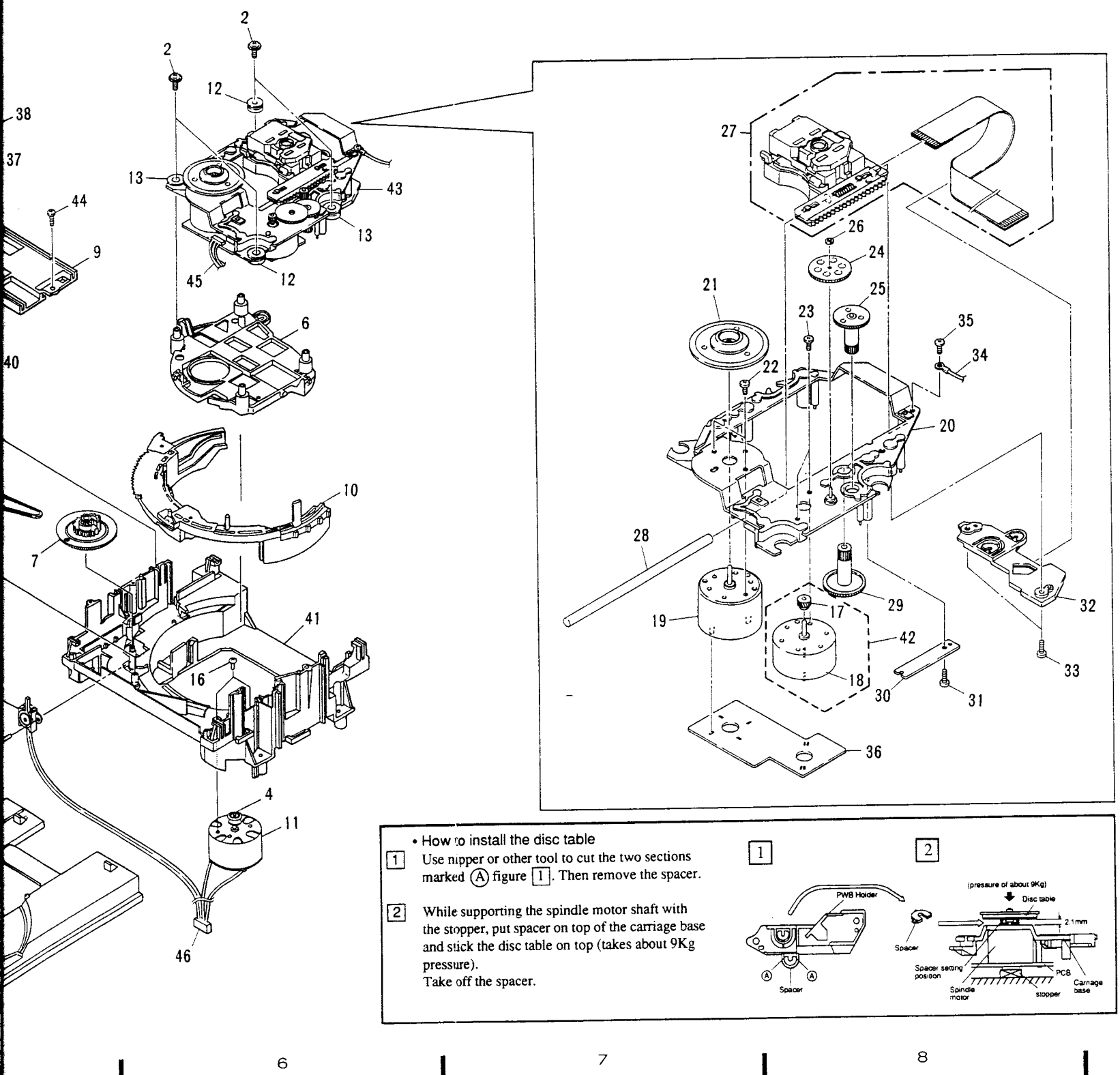
- How to install the disc table

1 Use nipper or other tool to cut the two sections marked Ⓐ figure 1. Then remove the spacer.

2 While supporting the spindle motor shaft with the stopper, put spacer on top of the carriage base and stick the disc table on top (takes about 9Kg pressure).
Take off the spacer.

**NOTE: Screws adjacent to ▼ mark on the product are used for disassembly.**



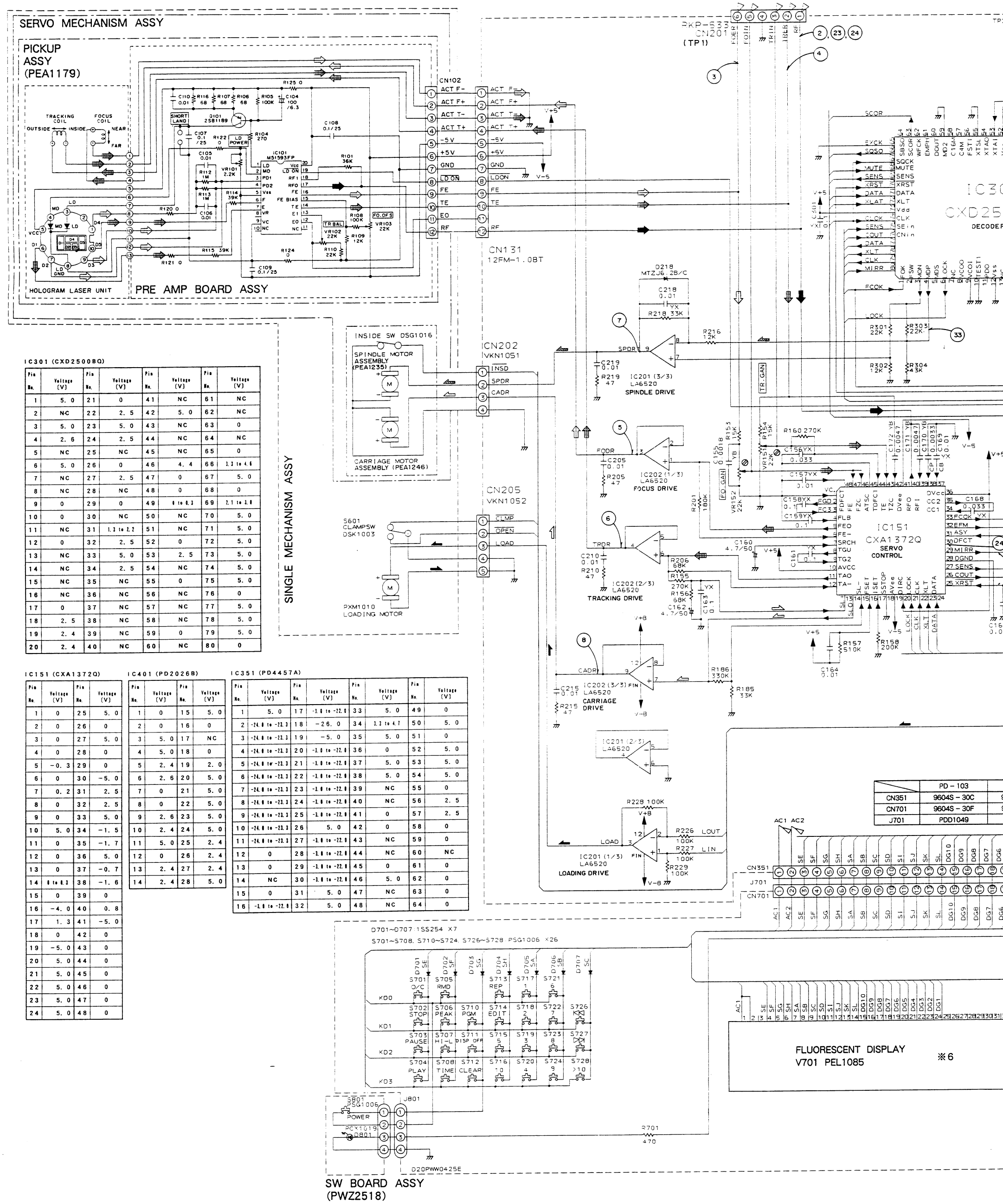



- How to install the disc table

1. Use nipper or other tool to cut the two sections marked Ⓐ figure 1. Then remove the spacer.
2. While supporting the spindle motor shaft with the stopper, put spacer on top of the carriage base and stick the disc table on top (takes about 9Kg pressure).
   Take off the spacer.

# 2.2 SCHEMATIC DIAGRAM

## ● MOTHER BOARD, SW BOARD, FUNCTION BOARD, HEADPHONE BOARD, PICKUP AND PRE AMP BOARD ASSY




**IC301 (CXD2500BQ)**

| Pin No. | Voltage (V) | Pin No. | Voltage (V) | Pin No. | Voltage (V) | Pin No. | Voltage (V) |
|---|---|---|---|---|---|---|---|
| 1 | 5.0 | 21 | 0 | 41 | NC | 61 | NC |
| 2 | NC | 22 | 2.5 | 42 | 5.0 | 62 | NC |
| 3 | 5.0 | 23 | 5.0 | 43 | NC | 63 | 0 |
| 4 | 2.6 | 24 | 2.5 | 44 | NC | 64 | NC |
| 5 | NC | 25 | NC | 45 | NC | 65 | 0 |
| 6 | 5.0 | 26 | 0 | 46 | 4.4 | 66 | 3.3 to 4.6 |
| 7 | NC | 27 | 2.5 | 47 | 0 | 67 | 5.0 |
| 8 | NC | 28 | NC | 48 | 0 | 68 | 0 |
| 9 | 0 | 29 | 0 | 49 | 0 to 0.3 | 69 | 2.1 to 3.0 |
| 10 | 0 | 30 | NC | 50 | NC | 70 | 5.0 |
| 11 | NC | 31 | 1.3 to 2.2 | 51 | NC | 71 | 5.0 |
| 12 | 0 | 32 | 2.5 | 52 | 0 | 72 | 5.0 |
| 13 | NC | 33 | 5.0 | 53 | 2.5 | 73 | 5.0 |
| 14 | NC | 34 | 2.5 | 54 | NC | 74 | 5.0 |
| 15 | NC | 35 | NC | 55 | 0 | 75 | 5.0 |
| 16 | NC | 36 | NC | 56 | NC | 76 | 0 |
| 17 | 0 | 37 | NC | 57 | NC | 77 | 5.0 |
| 18 | 2.5 | 38 | NC | 58 | NC | 78 | 5.0 |
| 19 | 2.4 | 39 | NC | 59 | 0 | 79 | 5.0 |
| 20 | 2.4 | 40 | NC | 60 | NC | 80 | 0 |

**IC151 (CXA1372Q)**

| Pin No. | Voltage (V) | Pin No. | Voltage (V) |
|---|---|---|---|
| 1 | 0 | 25 | 5.0 |
| 2 | 0 | 26 | 0 |
| 3 | 0 | 27 | 5.0 |
| 4 | 0 | 28 | 0 |
| 5 | −0.3 | 29 | 0 |
| 6 | 0 | 30 | −5.0 |
| 7 | 0.2 | 31 | 2.5 |
| 8 | 0 | 32 | 2.5 |
| 9 | 0 | 33 | 5.0 |
| 10 | 5.0 | 34 | −1.5 |
| 11 | 0 | 35 | −1.7 |
| 12 | 0 | 36 | 5.0 |
| 13 | 0 | 37 | −0.7 |
| 14 | 0 to 0.3 | 38 | −1.6 |
| 15 | 0 | 39 | 0 |
| 16 | −4.0 | 40 | 0.8 |
| 17 | 1.3 | 41 | −5.0 |
| 18 | 0 | 42 | 0 |
| 19 | −5.0 | 43 | 0 |
| 20 | 5.0 | 44 | 0 |
| 21 | 5.0 | 45 | 0 |
| 22 | 5.0 | 46 | 0 |
| 23 | 5.0 | 47 | 0 |
| 24 | 5.0 | 48 | 0 |

**IC401 (PD2026B)**

| Pin No. | Voltage (V) | Pin No. | Voltage (V) |
|---|---|---|---|
| 1 | 0 | 15 | 5.0 |
| 2 | 0 | 16 | 0 |
| 3 | 5.0 | 17 | NC |
| 4 | 5.0 | 18 | 0 |
| 5 | 2.4 | 19 | 2.0 |
| 6 | 2.6 | 20 | 5.0 |
| 7 | 0 | 21 | 5.0 |
| 8 | 0 | 22 | 5.0 |
| 9 | 2.6 | 23 | 5.0 |
| 10 | 2.4 | 24 | 5.0 |
| 11 | 5.0 | 25 | 2.4 |
| 12 | 0 | 26 | 2.4 |
| 13 | 2.4 | 27 | 2.4 |
| 14 | 2.4 | 28 | 5.0 |

**IC351 (PD4457A)**

| Pin No. | Voltage (V) | Pin No. | Voltage (V) | Pin No. | Voltage (V) | Pin No. | Voltage (V) |
|---|---|---|---|---|---|---|---|
| 1 | 5.0 | 17 | -3.0 to -22.0 | 33 | 5.0 | 49 | 0 |
| 2 | -24.0 to -23.3 | 18 | −26.0 | 34 | 3.3 to 4.7 | 50 | 5.0 |
| 3 | -24.0 to -23.3 | 19 | −5.0 | 35 | 5.0 | 51 | 0 |
| 4 | -24.0 to -23.3 | 20 | -3.0 to -22.0 | 36 | 0 | 52 | 5.0 |
| 5 | -24.0 to -23.3 | 21 | -3.0 to -22.0 | 37 | 5.0 | 53 | 5.0 |
| 6 | -24.0 to -23.3 | 22 | -3.0 to -22.0 | 38 | 5.0 | 54 | 5.0 |
| 7 | -24.0 to -23.3 | 23 | -3.0 to -22.0 | 39 | NC | 55 | 0 |
| 8 | -24.0 to -23.3 | 24 | -3.0 to -22.0 | 40 | NC | 56 | 2.5 |
| 9 | -24.0 to -23.3 | 25 | -3.0 to -22.0 | 41 | 0 | 57 | 2.5 |
| 10 | -24.0 to -23.3 | 26 | 5.0 | 42 | 0 | 58 | 0 |
| 11 | -24.0 to -23.3 | 27 | -3.0 to -22.0 | 43 | NC | 59 | 0 |
| 12 | 0 | 28 | -3.0 to -22.0 | 44 | NC | 60 | NC |
| 13 | 0 | 29 | -3.0 to -22.0 | 45 | 0 | 61 | 0 |
| 14 | NC | 30 | -3.0 to -22.0 | 46 | 5.0 | 62 | 0 |
| 15 | 0 | 31 | 5.0 | 47 | NC | 63 | 0 |
| 16 | -3.0 to -22.0 | 32 | 5.0 | 48 | NC | 64 | 0 |

| | PD-103 |
|---|---|
| CN351 | 9604S-30C |
| CN701 | 9604S-30F |
| J701 | PDD1049 |

# PRE AMP BOARD ASSY

MOTHER BOARD ASSY
(PWM1872 : PD-103/KUXJ, KCXJ)
(PWM1873 : PD-103/WBXK, WEMXK)
(PWM1874 : PD-103/WPW)
(PWM1875 : PD-103/RD)
(PWM1876 : PD-103/WL)
(PWM1877 : PD-203/KUXJ)
(PWM1878 : PD-203/WBXK, WEMXK, WL, WPW)
(PWM1879 : PD-203/RD)

※1

| | R445, R446 | R447, R448 |
|---|---|---|
| PD-103/WL, WPW, RD | 1K Ω | JUMPER |
| PD-103/KUXJ, KCXJ | 470 Ω | 470 Ω |
| OTHERS | 270 Ω | 470 Ω |

※2

| | |
|---|---|
| PD-103 | |
| PD-203 | |

※3

| | |
|---|---|
| PD-103/KUX WPW, WL, K | |
| OTHER | |

| | PD-103 | PD-203 |
|---|---|---|
| CN351 | 9604S-30C | 9604S-32C |
| CN701 | 9604S-30F | 9604S-32F |
| J701 | PDD1049 | PDD1041 |

※5

| | IC31, IC32 |
|---|---|
| PD-103/KUXJ, KCXJ | JUMPER |
| PD-203/KUXJ | JUMPER |
| OTHERS | ICP-N10 |

FUNCTION BOARD ASSY
(PWZ2817 : PD-103)
(PWZ2818 : PD-203)

FLUORESCENT DISPLAY
V701 PEL1085 ※6

※6 V701 PEL1085 FLUORESCENT DISPLAY

MOTHER BOARD ASSY
(PWM1872 : PD-103/KUXJ, KCXJ)
(PWM1873 : PD-103/WBXK, WEMXK)
(PWM1874 : PD-103/WPW)
(PWM1875 : PD-103/RD)
(PWM1876 : PD-103/WL)
(PWM1877 : PD-203/KUXJ)
(PWM1878 : PD-203/WBXK, WEMXK, WL, WPW)
(PWM1879 : PD-203/RD)

※1

| | R445, R446 | R447, R448 |
|---|---|---|
| PD-103/WL, WPW, RD | 1K Ω | JUMPER |
| PD-103/KUXJ, KCXJ | 470 Ω | 470 Ω |
| OTHERS | 270 Ω | 470 Ω |

※2

| | C433, C434 | IC405 |
|---|---|---|
| PD-103 | CEAS220M25 | NJM4558D-D |
| PD-203 | PCH1107 | NJM4565D-D |

※3

| | R461, R462 |
|---|---|
| PD-103/KUXJ, RD, WPW, WL, KCXJ | JUMPER |
| OTHER | 270 Ω |

PD-203, PD-103/WBXK, WEMXK ONLY

IC401 PD2026B(L) DAC

IC351 PD4457A SYSTEM CONTROL

LOW-PASS FILTER

JA401 (1/2) PKB1009 LINEOUT JACK

JA401 (2/2) PKB1009

MUTING DRIVER

HEADPHONE AMP

JA501 RKN1002

HEADPHONE BOARD ASSY (PWZ2522)

INVERTER BUFFER

JA393 PKN1005 DECK SYNCHRO JACK

PD-103/WL, RD ONLY

JA392 RKN1004 OUT SR JACK

JA391 RKN1004 IN

PD-203/KUXJ ONLY

PD-203/KUXJ ONLY
PD-103/KUXJ, KCXJ, WPW, WBXK, WEMXK ONLY

OTHER

REMOTE SENSOR SBX1610-51
PD-203 ONLY

SYSTEM RESET & +5V REGULATOR

-5V REGULATOR

IC21 PQ05RR12 IC22 NJM79L05 IC31 ICP-N10 IC32 ICP-N10

CAUTION : FOR CONTINUED PROTECTION AGAINST RISK OF FIRE, REPLACE ONLY WITH SAME TYPE No. ICP-N10, MFD BY ROHM CO., LTD. FOR IC31 AND IC32.

PDG1002 : KUXJ
RDG1010 : KCXJ
PDG1003 : WEMXK, WL
PDG1055 : WBXK
RDG1022 : WPW

AC POWER CORD

PTT1237 : KUXJ, KCXJ
PTT1236 : WEMXK, WBXK, WPW, WL

POWER TRANSFOMER

PTT1238

PD-103/RD
PD-203/RD

AC POWER CORD PDG1056

AC 110-127/220-240V 50/60Hz

PSB1006 S5 VOLTAGE SELECTOR

| | IC31, IC32 |
|---|---|
| KUXJ, KCXJ | JUMPER |
| /KUXJ | JUMPER |
| ERS | ICP-N10 |

※6 V701 PEL1085 FLUORESCENT DISPLAY

NOTE

RESISTORS
1/6W Type
Rating identified where used

CAPACITORS
(1) M : Mylar CQMA or CFTYA or Film
(2) YB : Ceramic CKCYB
(3) CH : Ceramic CCCCH
(4) YX : Ceramic CGCYX
(5) SL : Ceramic CCCSL
(6) Unmarked type CKCYF

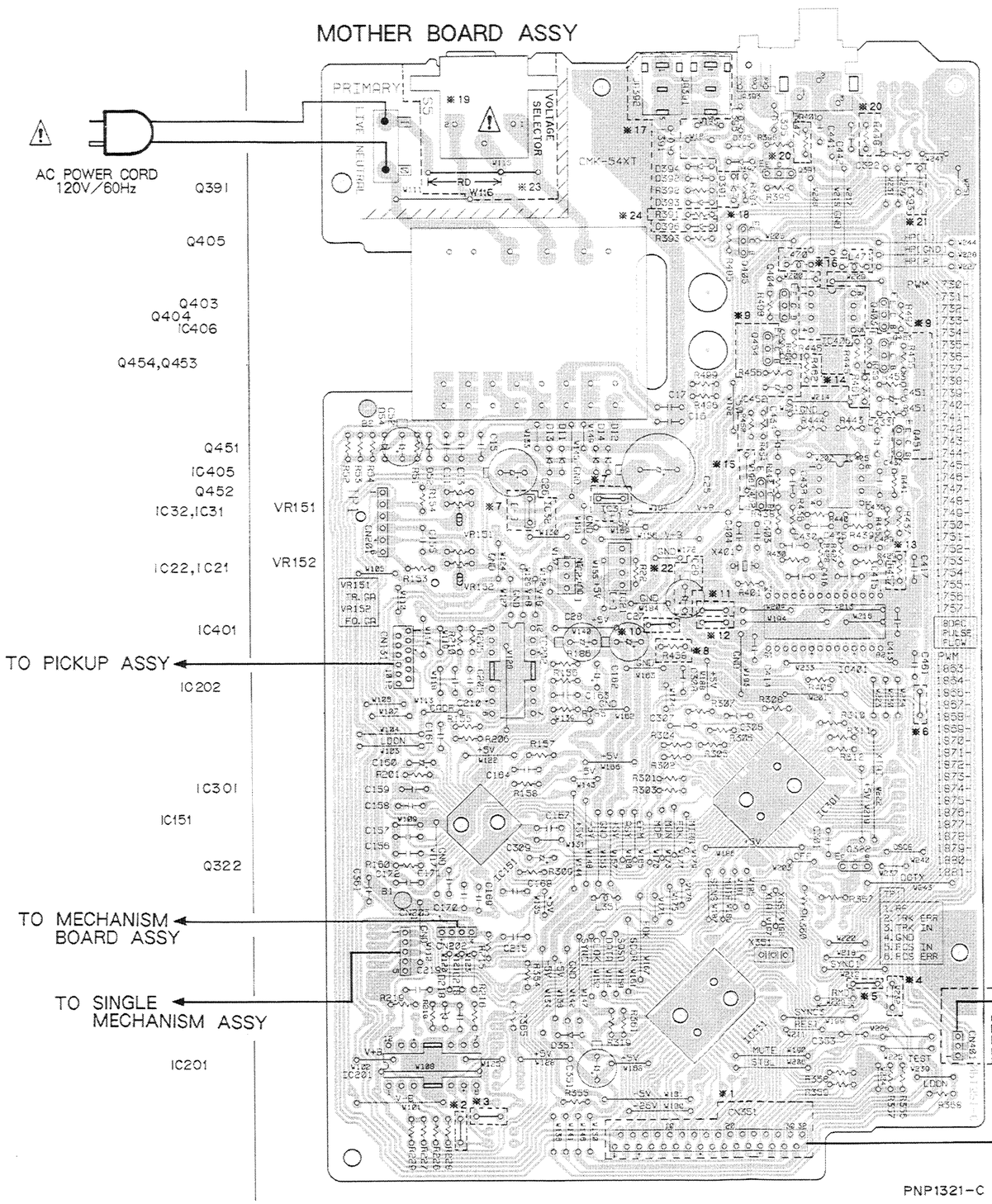
INDUCTORS
(1) Unmarked type Axial type LAU

OTHERS
⏚ : CHASSIS GROUND
ABC : LOW ACTIVE SIGNAL
AC KUXJ, KCXJ : 120V 60Hz
WBXJ, WBXK
WEMXK, WL, WPW : 220-240V 50/60Hz

SIGNAL ROUTE
⇨ : FOCUS SERVO LOOP LINE
➡ : AUDIO SIGNAL ROUTE
⇛ : TRAKING SERVO LOOP LINE
⇨ : CARRIAGE SERVO LOOP LINE
➡ : LOADING MOTOR ROUTE
⇛ : SPINDLE MOTOR ROUTE

## 2.3 PCB CONNECTION DIAGRAM

- This diagram is viewed from the mounted parts side.




※1

| | CN351 | CN701 |
|---|---|---|
| PD – 103 | 30pin | 30pin |
| PD – 203 | 32pin | 32pin |

※2

| | |
|---|---|
| PD – 103 | W613 |
| PD – 203 | W502 |

※3

| | |
|---|---|
| PD – 103 | W614 |
| PD – 203 | W501 |

※6

| | |
|---|---|
| PD – 103 | W602 |
| PD – 203 | W504 |

※7

| | KUXJ, RD | OTHERS |
|---|---|---|
| IC31 | JUMPER | USED |
| IC32 | JUMPER | USED |

※8

| | |
|---|---|
| PD – 103 | — |
| PD – 203 | R458 |

※12

| | |
|---|---|
| PD – 103 | W604 |
| PD – 203 | W507 |

※13

| | |
|---|---|
| PD – 103 | — |
| PD – 203 | R457 |

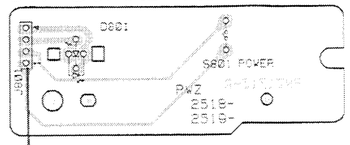
※14

| | R461 | R462 |
|---|---|---|
| PD – 103 | JUMPER | JUMPER |
| PD – 203 | USED | USED |

※20

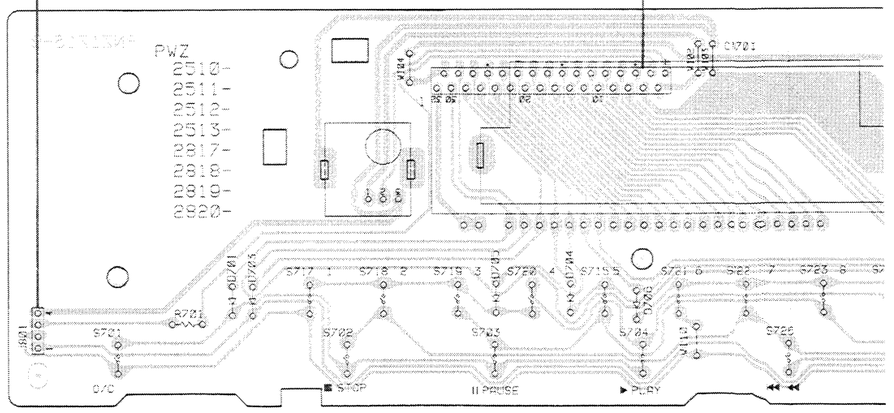
| | R |
|---|---|
| PD – 103/RD, WPW, WL | |
| PD – 103/KUXJ, KCXJ | |
| OTHERS | |

SW BOARD ASSY



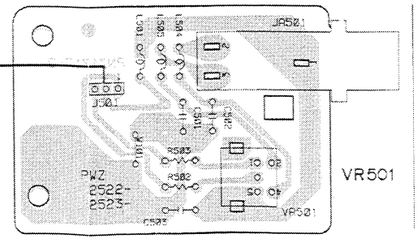

FUNCTION BOARD ASSY

TO MOTHER BOARD ASSY CN351




※16

HEADPHONE BOARD ASSY




TO FUNCTION BOARD ASSY CN701

※1

| | CN351 | CN701 |
|---|---|---|
| PD – 103 | 30pin | 30pin |
| PD – 203 | 32pin | 32pin |

※2

| | |
|---|---|
| PD – 103 | W613 |
| PD – 203 | W502 |

※3

| | |
|---|---|
| PD – 103 | W614 |
| PD – 203 | W501 |

※4

| | |
|---|---|
| PD – 103 | — |
| PD – 203 | W232 |

※5

| | |
|---|---|
| PD – 103 | W601 |
| PD – 203 | W503 |

※9 : PD – 203, PD – 103/WBXK, WEMXK ONLY

※6

| | |
|---|---|
| PD – 103 | W602 |
| PD – 203 | W504 |

※7

| | KUXJ, RD | OTHERS |
|---|---|---|
| IC31 | JUMPER | USED |
| IC32 | JUMPER | USED |

※8

| | |
|---|---|
| PD – 103 | — |
| PD – 203 | R458 |

※10

| | |
|---|---|
| PD – 103 | W605 |
| PD – 203 | W508 |

※11

| | |
|---|---|
| PD – 103 | W603 |
| PD – 203 | W506 |

※12

| | |
|---|---|
| PD – 103 | W604 |
| PD – 203 | W507 |

※13

| | |
|---|---|
| PD – 103 | — |
| PD – 203 | R457 |

※14

| | R461 | R462 |
|---|---|---|
| PD – 103 | JUMPER | JUMPER |
| PD – 203 | USED | USED |

※15

| | |
|---|---|
| PD – 103 | — |
| PD – 203 | W196 |

※16 : PD – 203, PD – 103/KUXJ, KCXJ, RD, WBXK, WEMXK ONLY

※17 : PD – 203/KUXJ, PD – 103/KUXJ, KCXJ, WBXK, WEMXK, WPW ONLY

※18 : PD – 203/KUXJ ONLY

※19 : PD – 203/RD, PD- 103/RD ONLY

※20

| | R445, R446 | R447, R448 |
|---|---|---|
| PD – 103/RD, WPW, WL | 1K Ω | JUMPER |
| PD – 103/KUXJ, KCXJ | 470 Ω | 470 Ω |
| OTHERS | 270 Ω | 470 Ω |

※21 : PD – 203/KUXJ, PD – 103/KUXJ, KCXJ ONLY

※22 : PD – 203/KUXJ, WBXK, WEMXK, WPW ONLY

※23

| RD | OTHER |
|---|---|
| W116 | W115 |

※24 : PD – 103/WL ONLY

SW BOARD ASSY

FUNCTION BOARD ASSY

TO MOTHER BOARD ASSY CN351

TO FUNCTION BOARD ASSY CN701

HEADPHONE BOARD ASSY

PNP1321-C

NOTE FOR PCB DIAGRAMS:

1. Part numbers in PCB diagrams match those in the schematic diagrams.
2. A comparison between the main parts of PCB and schematic diagrams is shown below.

| Symbol in PCB Diagrams | Symbol in Schematic Diagrams | Part Name |
|---|---|---|
| | | Transistor |
| | | Transistor with resistor |
| | | Field effect transistor |
| | | Resistor array |
| | | 3- terminal regulator |

NOTE FOR SCHEMATIC DIAGRAMS (Type 4A)

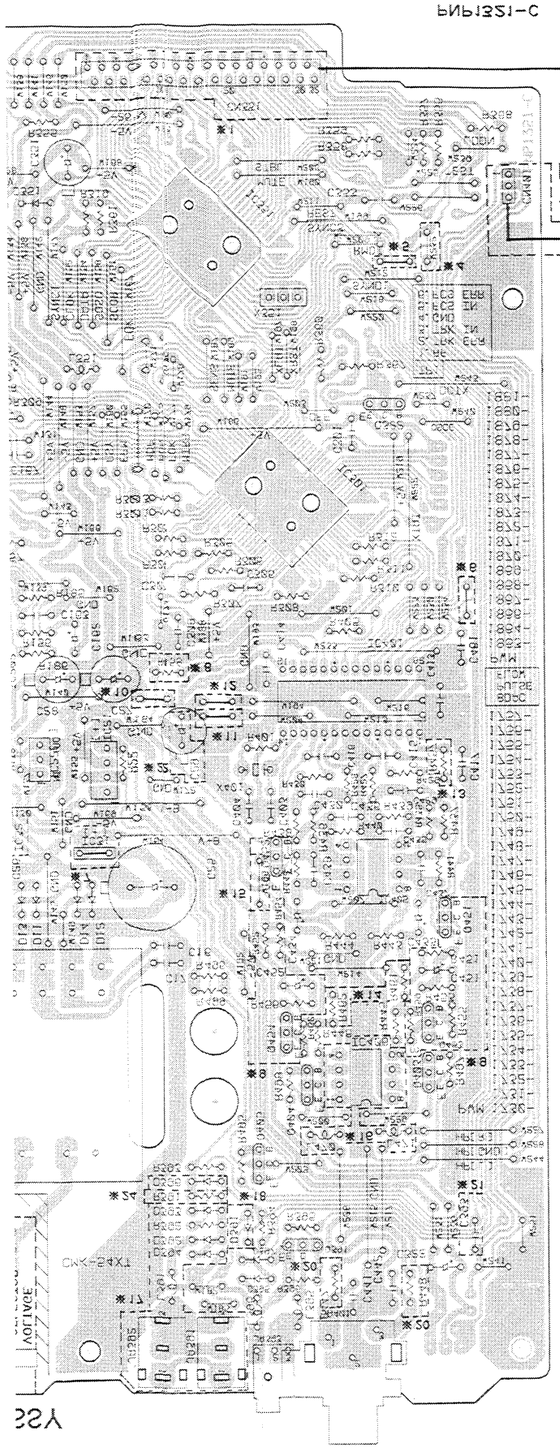
1. When ordering service parts, be sure to refer to "PARTS LIST of EXPLODED VIEWS" or "PCB PARTS LIST".
2. Since these are basic circuits, some parts of them or the values of some components may be changed for improvement.
3. **RESISTORS:**
   Unit: kΩ, MΩ, or Ω unless otherwise noted.
   Rated power: 1/4W, 1/6W, 1/8W, 1/10W unless otherwise noted.
   Tolerance: (F): ±1%, (G): ±2%, (K): ±10%, (M): ±20% or ±5% unless otherwise noted.
4. **CAPACITORS:**
   Unit: pF or μF unless otherwise noted.
   Ratings: capacitor (μF)/ voltage (V) unless otherwise noted.
   Rated voltage: 50V except for electrolytic capacitors.
5. **COILS:**
   Unit: mH or μH unless otherwise noted.
6. **VOLTAGE AND CURRENT:**
   ▭ or ⊢ V :
   DC voltage (V) in PLAY mode unless otherwise noted.
   ⇨ mA or ⇦ mA :
   DC current in PLAY mode unless otherwise noted.
   Value in { } is DC current in STOP mode.
7. **OTHERS:**
   - ⊘ or ⊘ : Adjusting point.
   - ◁ : Measurement point.
   - The ⚠ mark found on some component parts indicates the importance of the safety factor of the parts. Therefore, when replacing, be sure to use parts of identical designation.
8. **SCH–□ ON THE SCHEMATIC DIAGRAM:**
   - SCH–□ indicates the drawing number of the schematic diagram. (SCH stands for schematic diagram.)
9. **SWITCHES** (Underline indicates switch position)

FUNCTION BOARD ASSY

S701 : O/C
S702 : ■ STOP
S703 : ❚❚ PAUSE
S704 : ▶ PLAY
S705 : RND
S706 : PEAK
S707 : HILITE
S708 : TIME
S710 : PGM
S711 : DISP OFF
S712 : CLEAR
S713 : REP
S714 : EDIT
S715 : 5
S716 : 10
S717 : 1
S718 : 2
S719 : 3
S720 : 4
S721 : 6
S722 : 7
S723 : 8
S724 : 9
S726 : ◀◀
S727 : ▶▶
S728 : >10

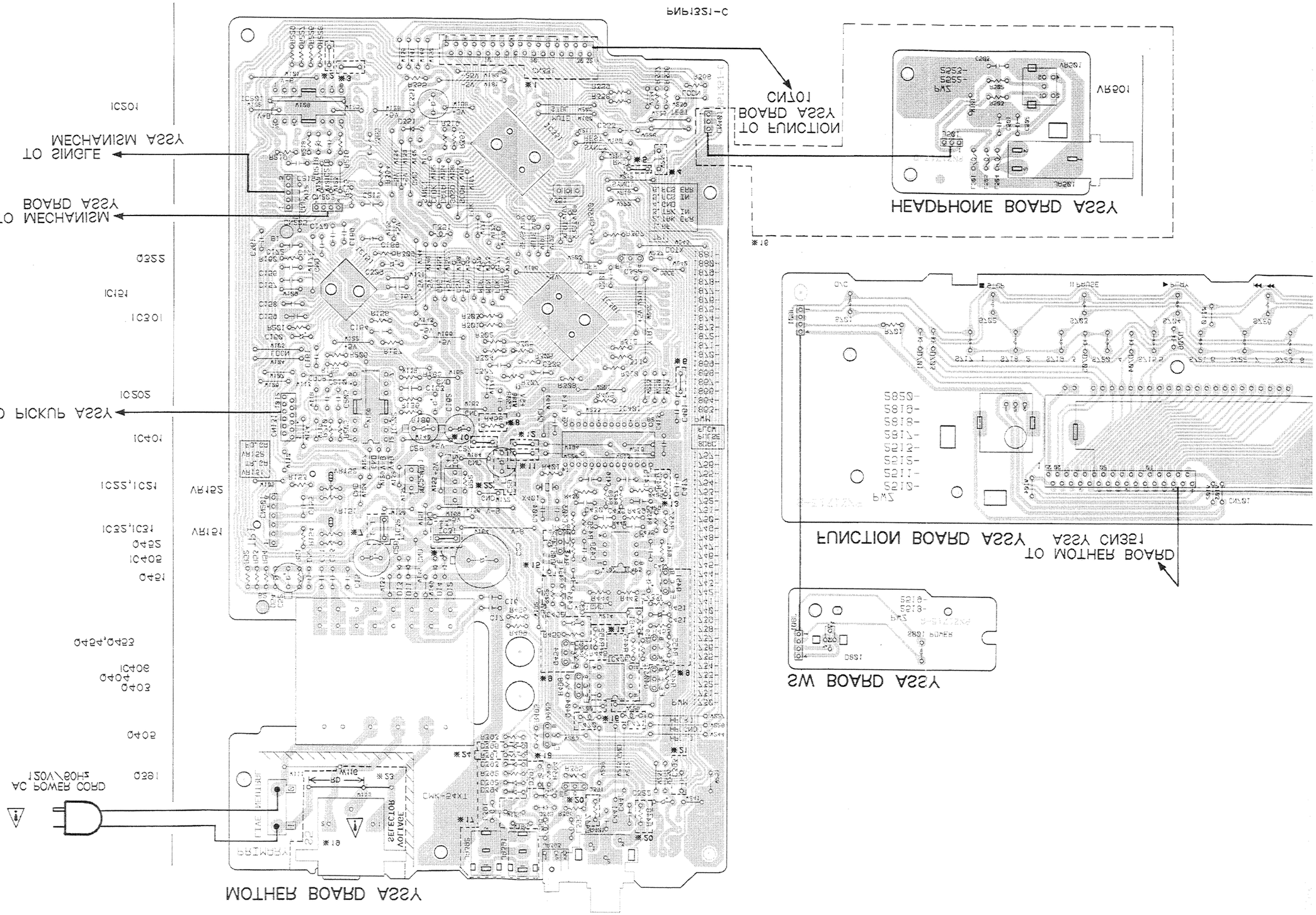
SW BOARD ASSY

S801 : POWER


CN101
TO FUNCTION BOARD ASSY
HEADPHONE BOARD ASSY
FUNCTION BOARD ASSY
TO MOTHER BOARD
ASSY CN201
SW BOARD ASSY

## 5.3 PCB CONNECTION DIAGRAM

• This diagram is viewed from the foil side.



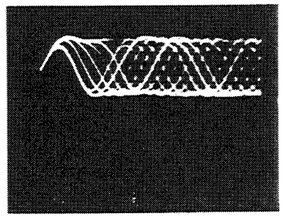
## 2.4 WAVEFORMS

Note: The encircled numbers denote measuring points in the schematic diagram.

*1 50T-JUMP: After switching to the pause mode, press the manual search key.

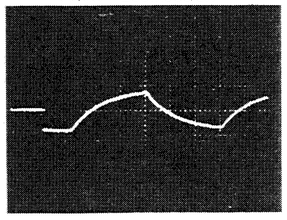
*2 FOCUS-IN: Press the key without loading a disc.

② TP1 - Pin 1: PLAY MODE
(RF)
500mV/div 500nsec/div



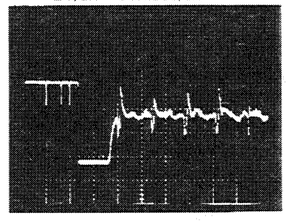
— GND

⑤ **IC202-Pin 3: FOCUS-IN (*2) MODE**
(FODR)
1V/div 200msec/div



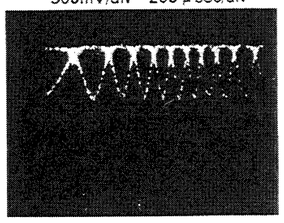
— GND

⑦ **IC201-Pin 9: TRACK SEARCH MODE**
(SPDR)
2V/div 50msec/div



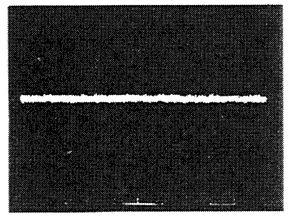
— GND

② TP1 - Pin 1: TRACK SEARCH MODE
(RF)
500mV/div 200 μ sec/div



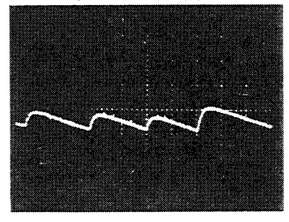
— GND

⑤ **IC202-Pin 3: PLAY MODE**
(FODR)
1V/div 1msec/div



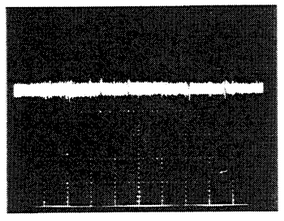
— GND

⑧ **IC202-Pin 9: PLAY MODE**
(CADR)
1V/div 2sec/div



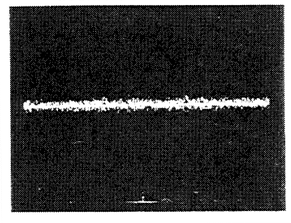
— GND

③ TP1 - Pin 6: PLAY MODE
(FOER)
100mV/div 10msec/div



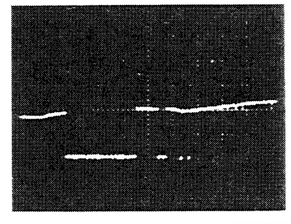
— GND

⑥ **IC202-Pin 4: PLAY MODE**
(TRDR)
500mV/div 1msec/div



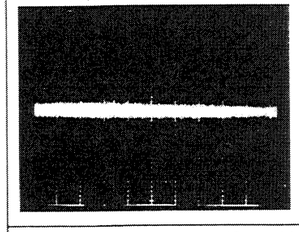
— GND

⑧ **IC202-Pin 9: TRACK SEARCH MODE**
(CADR)
2V/div 200msec/div



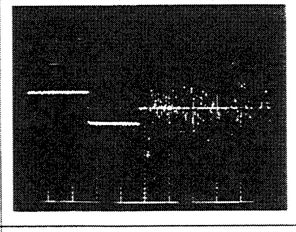
— GND

④ TP1 - Pin 2: PLAY MODE
(TRER)
1V/div 10msec/div



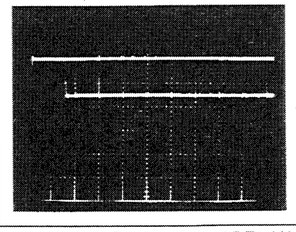
— GND

⑥ **IC202-Pin 4: 50T-JUMP (*1) MODE**
(TRDR)
500mV/div 1msec/div



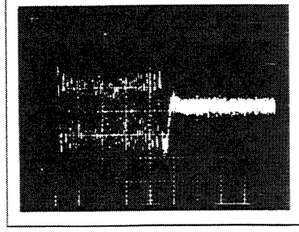
— GND

⑨ **IC151-Pin 32: PLAY MODE**
(EFM)
2V/div 500nsec/div



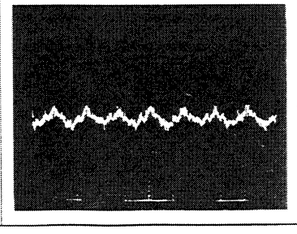
— GND

④ TP1 - Pin 2: 50T-JUMP (*1) MODE
(TRER)
1V/div 1msec/div



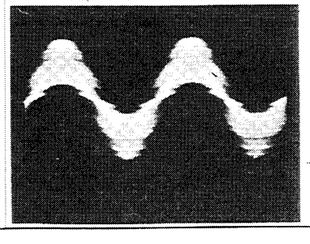
— GND

⑦ **IC201-Pin 9: PLAY MODE**
(SPDR)
1V/div 50msec/div



— GND

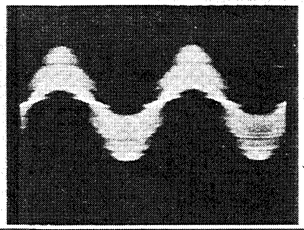
⑩ IC401-Pin 9: PLAY MODE (1kHz)
(LO) (D/A DATA OUT)
1V/div 200 μ sec/div



— GND



⑪ IC401 - Pin 10: PLAY MODE (1kHz)
(LO) (D/A DATA OUT)
1V/div 200 μ sec/div



— GND

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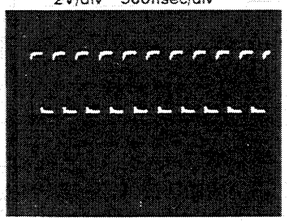
⑯ IC301 - Pin 35: PLAY MODE (1kHz)
(BCLK)
2V/div 500nsec/div



— GND

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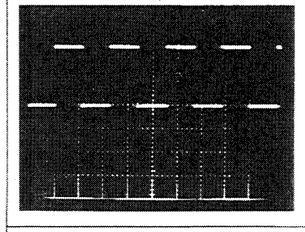
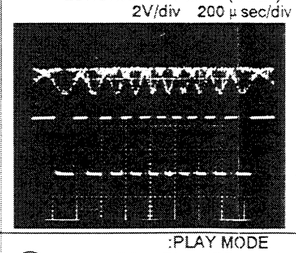
⑱ IC301 - Pin 32: PLAY MODE (1kHz)
(LRCK)
2V/div 10 μ sec/div



— GND

㉓ :TRACK SEARCH MODE
Upper: TP1 - Pin 1 (RF) 1V/div
**Lower: IC151-Pin 29 (MIRR)**
2V/div 200 μ sec/div



— GND

— GND

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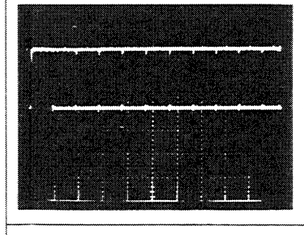
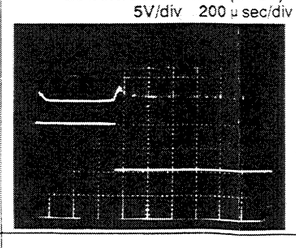
⑲ IC301 - Pin 34: PLAY MODE (1kHz)
(DATA)
2V/div 500nsec/div



— GND

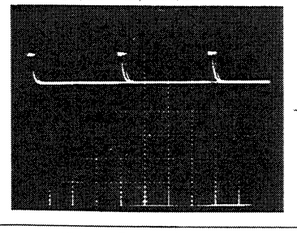
㉔ :PLAY MODE
Upper: TP1 - Pin 1 (RF) 1V/div
**Lower: IC151-Pin 30 (DFCT)**
5V/div 200 μ sec/div



— GND

— GND

㉝ IC301 - Pin 4: PLAY MODE
(MDP)
2V/div 2 μ sec/div



— GND

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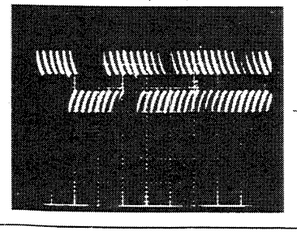
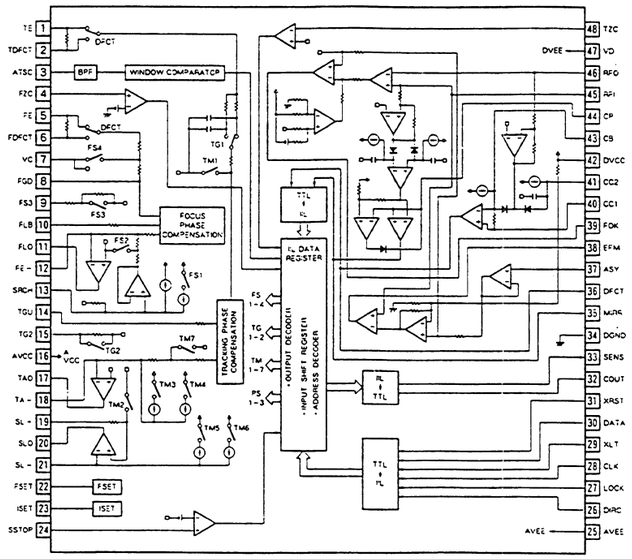
㊸ IC301 - Pin 20: PLAY MODE
(PCO)
2V/div 10 μ sec/div



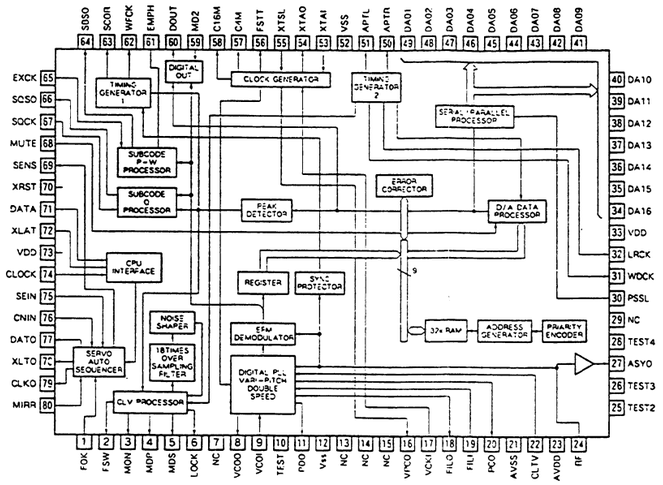
— GND

## 2.5 IC BLOCK DIAGRAM

**IC151:CXA1372Q**




**IC301:CXD2500BQ**




**IC401:PD2026B**